DOCUMENT RESUME

ED 294 332 EA 020 265

AUTHOR	Stern, Joyce D., Ed.; Chandler, Marjorie O., Ed.
TITLE	The Condition of Education. Elementary and Secondary Education, 1988. Volume 1.
INSTITUTION	Center for Education Statistics (OERI/ED), Washington, DC.
REPORT NO	CS-88-623
PUB DATE	88
NOTE	141p.; For Volume 2, dealing with post secondary education, see EA 020 266.
AVAILABLE FROM	Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 (Stock No. 065-000-00334-1: $5.00).
PUB TYPE	Reports - Research/Technical (143) -- Statistical Data (110)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Academic Achievement; *Educational Assessment; Educational Environment; Educational Finance; Educational Quality; *Educational Resources; Educational Trends; Education Work Relationship; *Elementary Secondary Education; Enrollment Trends; Ethnic Distribution; Expenditure per Student; Government Publications; *Outcomes of Education; School Demography; *School Statistics; Statistical Analysis; Student Characteristics; Surveys; Tables (Data); Teacher Attitudes
IDENTIFIERS	*Indicators

ABSTRACT

The current status of education is presented in the form of education "indicators"--key data that measure the "health" of education or its trends. These indicators derive from studies carried out by the National Center for Education Statistics as well as from surveys conducted elsewhere, both within and outside of the Federal Government. This year, the indicators are published in three volumes: (1) Elementary Secondary; (2) Post Secondary; (3) Supporting Data, Supplemental Information, Data Sources. The information in this publication provides indicators of the outcomes, resources, and context of elementary and secondary education. Outcome indicators are presented for student performance in general and for high school completion, by race and ethnicity. Resource indicators cover fiscal and human resources. Context indicators include student characteristics, aspects of the learning environment, perceptions of school teachers and the general public, and competency requirements for high school graduation and for teacher certification. Narratives and charts depict each indicator; 26 supporting tables are appended. (MLF)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED294332

NATIONAL CENTER FOR EDUCATION STATISTICS

Elementary and Secondary Education

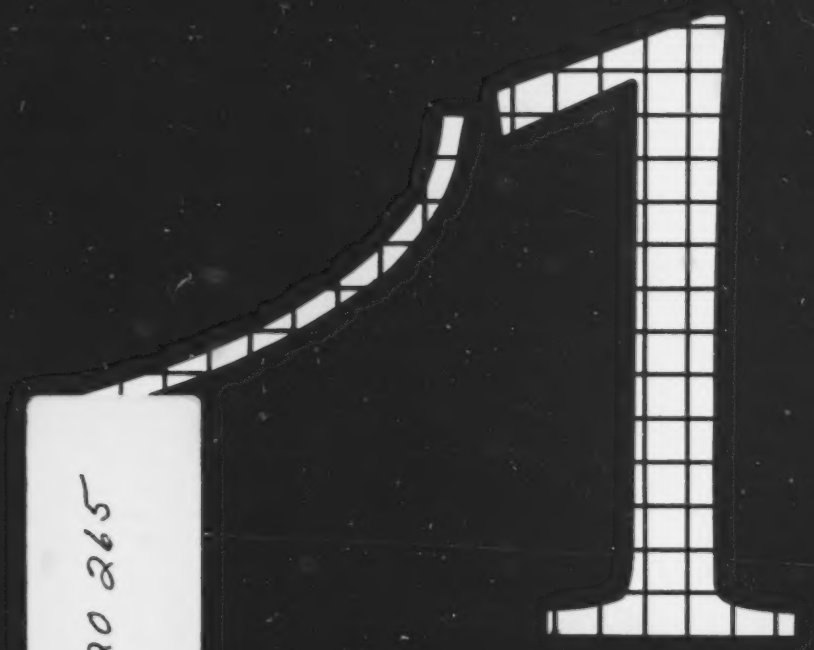
Volume 1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.



EA 020 265

U.S. Department of Education
Office of Educational Research and Improvement CS 88-623

Highlights

On a recent nationwide assessment, 80 percent or more of U.S. 11th graders had some knowledge of such aspects of history as pioneers in technology, the colonial period, economic history, geography, World War II, slavery, and the Bill of Rights. Less than 30 percent correctly answered questions dealing with the approximate dates of historical events, recent history, and the women's movement. (*Indicator 1:3*)

In the national literature assessment, 80 percent or more of 11th graders were able to answer questions involving the Bible, Shakespeare, black literature, children's classics, and more well-known American and English literature. Less than 30 percent could identify the American and European authors of certain, mostly modern, works of literature. (*Indicator 1:3*)

Over half of public and private high school principals surveyed in a 1985-86 study of science and mathematics education reported that their schools had trouble hiring fully qualified teachers in physics, chemistry, computer science, mathematics, and foreign languages. (*Indicator 1:15*)

The same survey indicated that nearly all public and private high schools offered biology but relatively few offered calculus. Small schools were less likely to offer chemistry, physics or calculus than medium or large schools. (*Indicator 1:25*)

Suburban and urban high schools were found more likely than rural schools to offer calculus; suburban schools were also more likely to offer physics than were rural schools. (*Indicator 1:25*)

In a 1986 national assessment of reading skills, average reading proficiency was lower for minority students, disadvantaged urban students, and males than for nonminority students, advantaged urban students, and females at all three grade levels tested (grades 3, 7, and 11). (*Indicator 1:1*)

The reading assessment revealed that all students had particular difficulty with tasks that required them to elaborate upon or defend their judgments and interpretations about what they had read. (*Indicator 1:1*)

A 1987 Metropolitan Life Poll showed that teachers felt that a major reason students have difficulties in school is because they "are left on their own after school." (*Indicator 1:22*)

An analysis of the relationship between school problems and reading achievement showed that students enrolled in schools with numerous problems have lower reading scores than students in schools where factors such as absenteeism, lack of parent interest, and discipline problems are not as prevalent. (*Indicator 1:21*)

Disruptive student behavior has increased in the last 5 years, according to about 44 percent of teachers surveyed in 1987. (*Indicator 1:19*)

THE CONDITION OF EDUCATION

Elementary and Secondary Education

1988

Volume 1

Editor:
Joyce D. Stern

Associate Editor:
Marjorie O. Chandler

.ю 14

U.S. Department of Education
William J. Bennett
Secretary

Office of Educational Research and Improvement
Chester E. Finn, Jr.
Assistant Secretary

National Center for Education Statistics
Emerson J. Elliott
Acting Commissioner

Information Services
Ray Fields
Director

National Center for Education Statistics

"The purpose of the Center shall be to collect, and analyze, and disseminate statistics and other data related to education in the United States and in other nations."—Section 406 (b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e–1).

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

Commissioner's Statement

The National Center for Education Statistics gathers and publishes statistics and other information on the status and progress of education in the United States. The Federal authorization for these activities (first enacted in 1867) states that the Center will "collect, collate, and from time to time, report full and complete statistics on the conditions of education in the United States." A later provision (sec. 406 (d)(1)(C) of the General Education Provisions Act) mandated an annual statistical report from the Secretary of Education on the subject. This 1988 edition is the 14th report under that mandate.

In the past, the data in these reports were organized into chapters dealing with broad topics in education and featured over 100 charts, together with extensive tabular material. To present the current status of education in a more succinct and accessible way, we began with the 1986 edition of *The Condition of Education* to present selected statistical information in the form of education "indicators"—key data that measure the "health" of education or its trends. These indicators derive from studies carried out by the Center as well as from surveys conducted elsewhere, both within and outside of the Federal Government. The data are the most current, valid, and representative education statistics available in America today for the subjects and issues with which they deal. No more than 40-50 indicators will be presented in a given year. By contrast, the Center's other major annual publication, *The Digest of Education Statistics*, is an exhaustive compendium of statistics on education.

This year, the Center has chosen to publish the indicators in three volumes. *The Condition of Education* report itself is scaled down and includes only the primary information—the narratives and charts depicting each indicator, plus the essential supporting tables. Furthermore, we have printed this information in two separate volumes, one addressing elementary and secondary education and one on postsecondary education. In addition, we are issuing a publication that includes the indicators from both of these volumes, plus all the technical supporting data, any supplemental information, and data sources for those wishing to have these additional resources.[1]

For elementary and secondary education, we present data from the most recent (1986) administration of the National Assessment of Educational Progress (NAEP) including indicators on reading skills, knowledge of history and literature, and computer competency. Another NAEP indicator correlates indices of school climate and

---

[1]Comparisons cited in the text based upon sample data are statistically significant at the 0.05 level of significance, unless otherwise stated. The larger volume also contains standard error tables for sample data.

reading performance. This report also contains analyses of data from the Center's most recent public and private school surveys. From the new National Survey of Science and Mathematics Education conducted by the National Science Foundation, information has been compiled on the difficulty of hiring fully qualified high school teachers, as well as on the availability of advanced mathematics and science courses in high school.

Despite all the new material, however, our goal has not been to develop ever more indicators. Rather, the purpose is to identify a basic set of indicators, together with supporting detail, that can be repeated with updated information each year. This basic set of indicators would be supplemented in each annual edition by indicators based on infrequent or one-time studies. Most indicators in this volume derive from comprehensive time series and thus have appeared in one form or another in previous editions of the *Condition*.

In future editions, the utility of this report should increase as more diverse data of high quality become available, especially as new time series can be constructed. I noted in last year's *Condition of Education* the inception of an expanded and more valid data base for elementary and secondary education. This major new national and State level education data collection effort, the Schools and Staffing Survey (SASS), is now underway. *The Condition of Education* for 1989 will present results from SASS, including comparisons between public and private schools in a number of areas.

Concurrently, the Center is also revising basic data collections on the universe of public schools in the Common Core of Data. Data collections will be more complete and more timely. The Center also has initiated a new longitudinal study of eighth graders—the National Education Longitudinal Study of 1988—that will provide data on the effects of both public and private high schools.

In developing indicators, the Center has participated in a widening national discussion about the types of measures that are useful in monitoring the progress of education. A number of local education agencies and States, such as California and Connecticut, are monitoring their reform agendas through education indicators. At the national level, the Council of Chief State School Officers (CCSSO) seeks to have consistent reporting by the States on a number of indicators that CCSSO has identified. The National Science Foundation (NSF) introduced education indicators on science and mathematics in the 1985 edition of its biennial report, *Science Indicators*, and in 1987 published a major report entitled *Indicator Systems for Monitoring Mathematics and Science Education*. The guidance in that report, both on suggested theoretical models and on the content of recommended indica-

tors, is applicable to education indicators in areas other than precollege mathematics and science. That publication was followed by further analyses from the National Academy of Sciences in a 1988 report entitled *Improving Indicators of the Quality of Science and Mathematics Education in Grades K-12.*

The Center also has convened its own meetings of researchers and practitioners to guide its efforts. The final selection of indicators presented in this volume has been based on substantial advice and consultation. They represent, therefore, a professional judgment as to what are the most critical measures of the "health" of education, tempered by the sometimes harsh limitations of available data.

Finally, the format of *The Condition of Education* is designed to present statistical information in an accessible manner for a general audience. Last year we took steps to obtain advice on structure and format from researchers and practitioners in education throughout the country. Their advice is reflected in the layout and charts on these pages. The Office of Educational Research and Improvement also published a special edition[2] of the 1987 *Condition* in a style virtually identical with this 1988 report. It was widely praised and strongly influenced our new presentation this year. Specifically, we have adopted a more journalistic style in the narratives and have placed the tables supporting each indicator chart in the appendix.

I hope you find the material helpful and invite you to send us comments on how to make future editions even more useful.

Emerson J. Elliott
Acting Commissioner

---

[2]U.S. Department of Education, Center for Education Statistics, *Elementary and Secondary Education Indicators in Brief, 1987,* (Washington, D.C.: 1987).

Acknowledgments

The Condition of Education was prepared in the National Center for Education Statistics (NCES), Office of Educational Research and Improvement (OERI), by the Condition of Education Division under the general supervision of Paul R. Hall, division director.

Joyce D. Stern, the division's Team Leader for Indicator Development, directed the development and production of this edition. Marjorie O. Chandler, head of the Education and Employment Team, provided assistance throughout. Mary Frase Williams was consulted for technical guidance.

Other division staff played important roles in producing indicators for this edition: Sharon A. Bobbitt derived original new indicators from the National Science Foundation's National Survey of Science and Mathematics Education and from the Metropolitan Life Survey of the American Teacher. She also updated and redrafted the bulk of the indicators continued from last year. In addition, Dr. Bobbitt provided computer expertise in transferring the manuscript on disk to the printing contractor and in designing many original indicator charts.

From National Assessment of Educational Progress (NAEP) data, Audrey Pendleton prepared the drafts of the new indicators on history and literature test performance, and on reading scores. The latter included an original analysis correlating school climate and NAEP reading performance. Joyce Stern prepared the NAEP computer indicator and the new indicator on school discipline problems. Lisa Avallone developed the indicator on enrollment in special education programs.

Curtis Baker updated and redrafted several indicators. Jan Ancarrow assisted in the research on several of the new ones. Debra Gerald and Paul Horn provided projection data. Thomas Snyder provided updated information for most of the continuing indicators. Brenda M. Wade typed most of the supporting tables and other extensive portions of the manuscript, as well as providing substantial general secretarial support services. Carmelita Stevenson also provided typing assistance.

The contributions of many NCES staff outside the Condition of Education Division are also gratefully acknowledged. Data, reviews, or other assistance were provided by Judith M. Carpenter, Milton Chorvinsky, William Fowler, Martin M. Frankel, Sandra C. Garcia, Charles Hammer, Susan T. Hill, Roslyn A. Korb, Elaine Kroe, Carlyle Maw, Paul Mertins, Eugene Owen, Mary Papageorgiou, Samuel Peng, and Peter Stowe.

From the Office of Research in OERI, critiques and valuable suggestions were provided by Sally B. Kilgore, Director, and Clifford Adelman, James C. Carper, Eleanor Chiogioji, Salvatore Corrallo, James Fox, Rita Foy, Conrad Katzenmeyer,

Martin E. Orland, Doris Redfield, Judy Segal, Ram N. Singh, Anne Sweet, John Taylor, and Duc-le To.

Lance Ferderer from Information Services (IS) of OERI provided invaluable editing assistance throughout the drafting of this publication. Together with Joyce Stern, Sharon Bobbitt, and Gayle Rogers, he contributed to the design and development of the new, popular style format in which *The Condition of Education* report is now presented. Margery Martin of IS also gave many useful editing suggestions.

Elsewhere in the Department, manuscript review and suggestions were obtained from Valena White Plisko and Alan Ginsburg (Office of Planning, Budget, and Analysis), Robert Marshall (Office of Vocational and Adult Education), Susan Thompson Hoffman (Office of Special Education and Rehabilitative Services), Amy Schwartz (Office of the General Counsel), and Dwight Crum (Office of Private Education).

From outside of the Department of Education, the following people provided invaluable help in the collection and interpretation of data: Richard Berry, Mary Golladay and Marge Machen from the National Science Foundation; Wayne Howe and William Smith from the Bureau of Labor Statistics; Iris Weiss from Horizon Research, Inc.; and Paul Siegel and Wendy Bruno from the Bureau of the Census.

Several individuals served as invited external peer reviewers and raised critical issues for consideration. They were: Charles V. Brady, Associate Director of the Catholic Conference of Illinois; John W. Evans of PACE at the University of California; Mary Golladay of the National Science Foundation; Willis D. Hawley, Dean of Peabody College, Vanderbilt University; Marsha Levine and Jewell Gould of the American Federation of Teachers; Jeannie Oakes of the RAND Corporation; Peter Prowda, Coordinator of Research Services with the Connecticut State Department of Education; and Emily Wurtz with Programs for the Improvement of Practice in OERI.

Charles Cowan, Chief Statistician, NCES, and his assistant, Donald Malec, offered valued technical guidance. For the perspective and original ideas they contributed throughout the development of the report, grateful acknowledgment is extended to Chester E. Finn, Jr., Assistant Secretary for OERI; Bruno Manno, Chief of Staff for OERI; and Emerson J. Elliott, NCES Acting Commissioner.

NOTE: These acknowledgments recognize those who developed new indicators for this edition and who updated indicators repeated from the 1986 and 1987 editions. Mention is not made of those who contributed to the initial development of continuing indicators and who were identified in the earlier editions of this report.

Contents

Page

Commissioner's Statement iii

Acknowledgments vii

Overview
by Joyce D. Stern 1

Indicators of Elementary and Secondary Education

A. Outcomes

Student Performance

1:1 Reading performance in grades 3, 7, and 11 16
1:2 Trends in mathematics performance of 9-, 13-, and 17-year-olds 18
1:3 Knowledge of U.S. history and literature 20
1:4 Computer competence in grades 3, 7, and 11 22
1:5 College entrance examination scores 24
1:6 Academic coursework and achievement 26

Transitions

1:7 High school completion, by race and ethnicity 28

B. Resources

Fiscal Resources

1:8 Expenditure per pupil in public schools 32
1:9 Public school revenues 34
1:10 National index of public school revenues per pupil in relation to per capita income 36

Human Resources

1:11 Staff employed in public school systems 38
1:12 Average annual salary of public school teachers 40
1:13 Pupil/teacher ratios 42
1:14 Demand for new hiring of public school teachers 44
1:15 Difficulty in hiring fully qualified high school teachers 46

Contents

Page

C. Context

Student Characteristics

1:16 Public and private school enrollment trends 50
1:17 Trends in public school enrollment: 1969 to 1997 52
1:18 Special education enrollment in federally supported programs 54

Learning Environment

1:19 Disruptive behavior in the public schools 56
1:20 Student drug and alcohol abuse 58
1:21 School climate and reading performance 60

Perceptions

1:22 Perceptions of student problems and education improvement strategies 62
1:23 Public opinion of public schools and other national institutions 64

Requirements

1:24 Graduation requirements in public and private high schools ... 66
1:25 Availability of advanced mathematics and science courses in high school 68
1:26 Competency testing for teacher certification 70

Tables

Indicator 1:1

1:1-1 Average reading proficiency for students in grades 3, 7, and 11, by selected characteristics: 1986 75
1:1-2 Percent of students at each level of written response to reading tasks, by grade: 1986 76

Indicator 1:2

1:2-1 Average mathematics proficiency scale scores for 9-, 13-, and 17-year-old students: Selected years, 1973–1986 77
1:2-2 Percent of 9-, 13-, and 17-year-old students at or above the five proficiency levels on the mathematics proficiency scale: 1978, 1982, and 1986 78

Page

Indicator 1:3

1:3-1 U.S. history item responses: 1986 79
1:3-2 Literature item responses: 1986 80
1:3-3 Average scores on the U.S. history and literature scales for high school juniors, by selected characteristics: 1986 81

Indicator 1:4

1:4-1 Overall computer competence scores for students in grades 3, 7, and 11: School year ending 1986 82
1:4-2 Computer competence scores for students in grades 3, 7, and 11, by computer use, study or ownership: School year ending 1986 83
1:4-3 Computer competence scores for students in grades 7 and 11, by home and school experience: School year ending 1986 84

Indicator 1:5

1:5-1 Scholastic Aptitude Test (SAT) scores: School years ending 1963–1987 85
1:5-2 American College Testing (ACT) scores: School years ending 1970–1987 86
1:5-3 Scholastic Aptitude Test (SAT) scores, by control of high school: School years ending 1981–1987 87
1:5-4 American College Testing (ACT) scores, by control of high school: Selected school years ending 1982–1987 88

Indicator 1:6

1:6-1 American College Testing (ACT) average scores, by subject and number of courses taken in subject: 1985 89

Indicator 1:7

1:7-1 High school completion of persons aged 18–19 and 20–24, by race and Hispanic origin: 1974–1986 90
1:7-2 High school completion for persons aged 25-34, by race and Hispanic origin: 1974–1986 91

Indicator 1:8

1:8-1 Total and current expenditure per pupil in average daily attendance in public elementary and secondary schools: Selected school years ending 1950–1987 92

Contents

Page

1:8-2 Current expenditure per pupil in average daily attendance in public elementary and secondary schools, by State: School years ending 1970 and 1986 93

Indicator 1:9

1:9-1 Revenue sources for public elementary and secondary schools: Selected school years ending 1920–1987 94

Indicator 1:10

1:10-1 National index of public school revenues per pupil in relation to per capita income: Selected school years ending 1930–1987 .. 95

1:10-2 State indices of public school revenues per pupil in relation to per capita income: School years ending 1980 and 1987 96

Indicator 1:11

1:11-1 Full-time-equivalent staff employed in public school systems: Selected school years ending 1960–1987 98

1:11-2 Full-time-equivalent staff employed in public school systems: School years ending 1983–1987 99

Indicator 1:12

1:12-1 Estimated average annual salary of teachers in public elementary and secondary schools: Selected school years ending 1960–1987 100

Indicator 1:13

1:13-1 Pupil/teacher ratios, by size, control, and level 101

1:13-2 Trends in pupil/teacher ratios in public elementary and secondary schools: School years ending 1971–1986 102

1:13-3 Trends in median class size in public elementary and secondary schools: Selected years, 1961–1986 103

Indicator 1:14

1:14-1 Projected annual demand for new hiring of classroom teachers in public elementary/secondary schools: Fall 1988–1997 104

Page

Indicator 1:15

1:15-1 High school principals who reported having difficulty hiring fully qualified teachers for vacancies, by school size, type of community, and subject: School year ending 1986 105

Indicator 1:16

1:16-1 Public and private school enrollment, kindergarten through grade 12 (K–12): 1970–1986 106

Indicator 1:17

1:17-1 Enrollment in kindergarten through grade 8 (K–8) and grades 9–12 of public elementary and secondary schools, with projections: 1969–1997 107

Indicator 1:18

1:18-1 Elementary and secondary students served in federally supported education programs for the handicapped, by type of handicap: School years ending 1979–1987 108

Indicator 1:19

1:19-1 Total number of teachers and teacher evaluation of the change in disruptive behavior, by school characteristics: School year ending 1987 110

1:19-2 Percent of public school teachers indicating extent to which student behavior interferes with their teaching, by school level and metropolitan status: School year ending 1987 111

Indicator 1:20

1:20-1 Trends in the use of drugs and alcohol by high school seniors: Selected years, 1975–1987 112

Indicator 1:21

1:21-1 Actual and adjusted average reading proficiency scale scores, by average rating on school problems for 4th, 8th, and 11th graders: 1984 113

1:21-2 Average rating of school problems, by grade and control of school: 1984 114

Contents

Page

Indicator 1:22

1:22-1 Teachers who think that each of several factors is a "major cause" of students' difficulties in school, by wealth of district: 1987 115
1:22-2 Parents and teachers who think that each of several steps would "help a lot" to improve education: 1987 116
1:22-3 Criticisms that parents and teachers think are valid for many parents: 1987 117
1:22-4 Characteristics of children, by frequency with which they are left alone after school, according to parents: 1987 118

Indicator 1:23

1:23-1 The public's rating of the schools—percent giving the schools an A, B, C, D, or F: 1977–1987 120
1:23-2 The public's confidence in selected institutions: Selected years, 1973–1987 121
1:23-3 Percent of the public grading the public schools A, B, C, D, or F, by type of school parent's child attends: 1987 122

Indicator 1:24

1:24-1 Average years of coursework required for high school graduation in private schools with grade 12: School year ending 1986 123
1:24-2 Average years of coursework required for high school graduation by public school districts with high schools: School years ending 1982, 1985, and 1988 124
1:24-3 Number of courses required for high school graduation in 1980 and 1987, year effective, and increase in units required, by State: 1987 125

Indicator 1:25

1:25-1 High schools offering selected courses, by school size and type of community: School year ending 1986 127
1:25-2 High schools offering 0, 1, 2, 3, 4, and 5 or more sections of selected courses: School year ending 1986 128

Indicator 1:26

1:26-1 States that have enacted testing programs for initially certifying teachers: Fall 1987 129

Introduction

The education scene today may be characterized by its dynamism and ferment. Since the early 1980s, the country has become increasingly aware of the range of critical issues facing its schools. They are nationwide in scope and include problems of declining academic performance, concerns about teacher qualifications and availability, reports of drugs and violence in the schools, and observations of declining involvement of parents in the education of their children. These issues have serious implications, not only for the effective operation of the schools, but for future individual employment and U.S. economic competitiveness, and ultimately for the kind of society that is emerging.

The Nation has responded to this situation by renewing its commitment to excellence. The extent of this commitment constitutes a major reform movement in education, one involving government at all levels, school officials and teachers, institutions of higher education, as well as interested laymen. Reforms include expanded academic programs for students, efforts to improve the safety of the schools, increased requirements for high school graduation, and new approaches to attract better-qualified individuals into the teaching profession.

The indicators presented in this volume touch on many of issues in elementary and secondary education today. They are discussed below under five major headings: (1) school enrollment; (2) support; (3) the teaching profession; (4) school environment; and (5) outcomes of schooling.

School Enrollment

The basic component of any school system is student enrollment. It generates the need for instructional programs, teachers, administrators, and buildings. Forecasts of future enrollments are essential for decisions pertaining to budgeting and overall policy. The "baby boom echo" that caused elementary school enrollment to rise in 1985 is projected to continue rising through the mid-1990s. The number of these students is expected to go from 28 million in 1987 to 30.8 million by 1997. Secondary school enrollment will continue to decline for several more years. The number of secondary school students will drop to 11.4 million by 1990, when it will then begin to rise. It will reach 13 million by 1997 (*Indicator 1:17*).

Freedom of choice in educating one's children is a tradition dating back to this

country's colonial period. In the fall of 1986, private school was an alternative selected by the parents of some 4.8 million students in kindergarten through 12th grade. Enrollment of private school children as a proportion of total student enrollment has been generally stable at about 10 percent since 1970 (*Indicator 1:16*).

In addition to taking into account aggregate demographic information, schools must plan for different types of students. One such group is the population requiring special education (*Indicator 1:18*). Since 1979, the number of children identified under the Education for All Handicapped Children Act (P.L. 94-142) as requiring special education has risen from 3.9 million to 4.4 million in 1986. The increase has been due primarily to the number of students categorized as learning disabled.

Support for Public Schools

Expenditures and Revenues: Schools require financial resources to pay for programs, staff, and facilities. Indicators that describe support for schools can be portrayed in several ways. Virtually all available measures display phenomenal growth in financial resources directed to public schools. For example, average expenditures per pupil (current and total) have grown dramatically between school years 1949–50 and 1985–86. When adjusted for inflation, current expenditures per pupil more than tripled in that time period (*Indicator 1:8*).

Another way to calculate the proportion of fiscal resources directed to the public schools is to create a composite index to account for a range of factors. One such measure (*Indicator 1:10*) examines the proportion of personal income directed to the public schools and takes into account the relative size of the school-age population. As computed this way, support for public education is also shown to have risen substantially over the years.

An interesting perspective on finances is provided by examining trends in public school revenues derived from the different jurisdictional levels—Federal, State, and local (*Indicator 1:9*). A pattern has emerged that reflects changing perceptions of role and the changing ability of different levels of government to raise funds for education. While from 1920 to 1974 local governments provided the bulk of all revenues for public schools, over that period the proportion of this local support dropped by nearly half. It now stands at an estimated 44 percent of all public school revenues. At the same time, the State share rose fairly steadily, going from just 16.5 percent in 1920 to an estimated 50 percent in 1987. The Federal share has

historically been small, never more than 10 percent. In school year 1986–87 it was about 6 percent.

As States and localities have moved to fund reform initiatives, there has been a continuing interest in the link between greater financial investment and increased student performance. However, research on this association is inconclusive; particularly lacking is knowledge of how more effective schools target their funds.

Public Opinion: The investment in public education is ultimately determined by taxpayers who register their interests and concerns at the ballot box, whether for school board members or for local, State, and national political figures. As the resource indicators in this volume show, the American people have provided increased financial support for the public schools. Citizens are now registering a rising confidence in them. For example, in 1987, respondents gave local public schools a higher grade than they had given in the decade since the Gallup organization began asking the public to grade the schools (*Indicator 1:23*). Nevertheless, this grade (a C+) remains undistinguished.

The Teaching Profession

Staff: School enrollment trends help drive budget allocations, including the decision to hire additional teachers. Another major factor affecting new hiring is, of course, staff turnover, i.e., the need to replace teachers who have retired or taken other jobs. Projecting this need into the 1990s (*Indicator 1:14*) is useful to school officials who must plan recruitment efforts and to policymakers debating ways to make the profession more attractive to prospective teachers. It is estimated that the annual need for new hiring will go from 128,000 teachers next fall to 174,000 in 1995 before leveling off. The rate of growth in the demand for new hires at the secondary level will outpace that at the earlier grades. However, the total number of new hires at the elementary school level will remain substantially greater than at the secondary level throughout the period.

The number of students a teacher is expected to teach also affects expenditures and hiring. One measure of the relationship between the number of teachers and the number of students is class size, that is, the average number of students a teacher faces in a classroom. Another measure is pupil/teacher ratio. In this second measure, all full-time teachers are counted, including those such as art and music teachers who do not have regular classroom assignments (*Indicator 1:13*). Data show that pupil/teacher ratios in public and private schools are similar. In both

sectors, elementary schools had considerably higher ratios than secondary schools, and larger schools enrolled more students per teacher. Other data collected using different methodologies show that there has been a long-term trend to fewer students per teacher.

In addition to variations in the type and number of students enrolled, other factors such as legislative mandates for special programs, reporting requirements, and policy changes may affect the type of staff hired by the public schools. For example, since 1959-60, the number of staff employed in public schools more than doubled—from about 2 million to a little over 4 million. The hiring of more administrative and support staff during the period has translated into a lower proportion of teachers to total staff—down from 65 percent to 53 percent (*Indicator 1:11*).

Salaries: The largest single expense for schools is teacher salaries. In recent years, some have argued that to improve the quality of the teaching force, teacher salaries must rise. This view has resulted in a marked increase of 18 percent in the real value of teacher salaries nationally since school year 1980-81. After a decline during the 1970s, the purchasing power of teacher salaries rebounded in 1987 to the level of the early 1970s (*Indicator 1:12*).

Quality: Increasing teachers' salaries is but one perceived way to achieve the goal of improving teacher quality. As another measure, most States are now in the process of requiring that teachers pass a competency test as a prerequisite for certification (*Indicator 1:26*). At the National level, the Carnegie Forum on Education and the Economy has proposed the development of standards covering subject matter, education courses, and teaching performance.[1] Affecting this area will be on-going research at teacher training institutions and debate by policymakers on what teachers should know and be able to do. States and localities also are experimenting with a variety of career roles and responsibilities for teachers, as well as with alternative certification requirements. Under the latter programs, States authorize schools to employ as teachers noncertified individuals with at least a bachelor's degree and concurrently offer special training leading to eligibility for a standard teacher credential.[2] The purpose of all these measures is to enhance the general professionalism of the field and thereby attract and retain higher quality

[1] Carnegie Forum on Education and the Economy, *A Nation Prepared*, 1986.

[2] Nancy E. Adelman, *An Exploratory Study of Teacher Alternative Certification and Retraining Programs*, U.S. Department of Education (Washington, D.C.: 1986).

personnel. As these approaches are refined and gain wider acceptance, new and more sophisticated indices on teachers should emerge.

Additional teachers may be needed in the next decade because of departing teachers and expanding enrollments. Responding to this need could undermine efforts to improve the quality of the teaching force. Shortages already identified in some parts of the country and in some fields could become more widespread. For example, some principals reported their schools had difficulty hiring fully qualified teachers in school year 1985-86 (*Indicator 1:15*). Problems were particularly acute in rural schools and small schools, and for the fields of science and foreign languages. Such findings are important to policymakers and school officials designing teaching incentives, to those setting salary scales, and to officials responsible for training teachers. They also may help college students decide on a course of study or career plan.

The School Environment

School Setting: The dynamic of schooling is affected by more than either fiscal allocations or the teaching force. Safety in the schools and the general school climate can profoundly affect conditions for learning. These areas have been given considerable attention in recent years. Concerns have been voiced about the levels of disruption by misbehaving students, the incidence of crime on or near the school grounds, and the availability of drugs. There also has been research evidence documenting the common sense notion that certain positive environmental characteristics of an educational institution correlate with improved student academic performance.

In one survey of student conduct in 1987, public school teachers reported a substantial increase in disruptive behavior by students over the last 5 years (*Indicator 1:19*). At the same time, teachers indicated that school policies for dealing with problems of student behavior have much improved since 1980. However, only half felt policies in their schools were applied consistently.

Another problem, which many feel threatens the well-being of American society, is drug and alcohol abuse. Indeed, a 1987 survey of U.S. high school seniors indicated that despite modest declines in recent years, the use of drugs and alcohol remains widespread among young adults in this country (*Indicator 1:20*). For example, over half of high school seniors reported they had tried an illegal substance at some point in their lives, while 9 out of 10 reported using alcohol. These

substances alter the ability to think and to learn. The survey reveals that they are affecting very large numbers of students.

Research on effective schools suggests that schools with positive climates promote student academic achievement. While the details of what constitutes a positive climate vary from study to study, there is some agreement. One component frequently identified is a safe, orderly environment. Consistent with this thesis is the finding that students from schools whose principals reported numerous problems (such as absenteeism and vandalism) had lower reading scores than students from schools where such problems were not as prevalent (*Indicator 1:21*). This finding has implications for school policy by demonstrating once again that school climate is associated with learning.

Problems such as poor academic performance and disruptive behavior have a variety of causes. How these problems are addressed in the schools may be determined in part by an assessment of the causes. Shedding some light on this situation is *Indicator 1:22*, which portrays the perceptions of teachers and parents. Over half of the teachers surveyed thought the major reason students have difficulty in school is because too many children are left alone after school. In addition, over 80 percent of the teachers said that having parents spend more time with their children would "help a lot" to improve education. Of all possible choices, this home-based remedy got the largest support from the teachers. The most popular remedy with parents (88 percent) was that the school notify parents immediately about problems involving their child. Having parents limit television until all homework was finished was the second most popular choice of both parents and teachers.

Graduation Requirements/Course Availability: One criticism of the schools in the early years of the current reform movement was that their expectations for students' academic performance had become too low. The National Commission on Excellence in Education, for example, charged in 1983 that the high school curriculum had become "diluted and diffuse." One major response by the States and individual school districts to that criticism was to increase the graduation requirements for high school students. Between 1980 and 1986, 39 States increased these requirements.

Graduation requirements in public and private high schools are contrasted in *Indicator 1:24.* By the mid-1980s, both types of schools approximated the 4-year requirement for English and the 3-year requirement for social studies that were recommended by the Commission, but public school requirements in mathematics and science remained considerably lower than either private school requirements or the 3 years for each subject recommended by the Commission.

While requirements are a major factor in determining what courses high school students take, an important constraint is whether courses are offered. During school year 1985-86, most schools, regardless of size, offered biology courses, but chemistry and physics courses were considerably less likely to be offered in small high schools (fewer than 800 students) than in medium or large schools. Calculus, considered essential preparation for science and mathematics study at the college level, was not widely available; only about 30 percent of all high schools offered it (*Indicator 1:25*). These findings have long-term implications for an adequately trained scientific workforce and for this country's ability to compete successfully in the international arena with other developed and technically sophisticated countries.

Outcomes of Schooling

America's citizens naturally hope that the investment they make in educating American children will yield successive generations of individuals who can lead productive lives and contribute to society. Measures of the long-term results remain inadequate, but steps have been taken in recent years at least to document students' knowledge and skills. Equipped with such information, teachers, administrators, parents, policymakers, and legislators may assess the efforts put into education and determine if changes are needed.

The Congressionally mandated National Assessment of Educational Progress (NAEP) periodically tests nationally representative samples of students in key subject and skill areas. The results of recent tests in reading, mathematics, history and literature, and computer skills demonstrate, without exception, the need for considerable improvement by American students at all grade levels in a range of academic skills and disciplines.

Reading skills are considered basic to the education process. In assessing reading achievement in school year 1985-86, NAEP asked students to read prose passages and answer questions about them. *Indicator 1:1* compares the average reading performance of white, black, and Hispanic students in grades 3, 7, and 11. It shows that black and Hispanic students performed below white students at all grade levels. All students had difficulty in tasks requiring them to write and defend or elaborate upon what they had read.

Trend information is available on the performance of 9-, 13-, and 17-year-olds on

NAEP mathematics tests administered in 1973, 1978, 1982, and 1986 (*Indicator 1:2*). In 1986, 9-year-olds showed significant improvement. Seventeen-year-olds also improved. They scored higher in 1986 than their counterparts in both 1978 and 1982, but their scores were lower than the estimated levels of 1973. Despite improvements noted, scores remain low. For example, few older students scored at the upper end of the scale, which required the ability to do multistep problem solving and algebra.

In 1985-86, NAEP tests in both history and literature were administered to high school juniors (*Indicator 1:3*). While over 80 percent of the students responded correctly to questions involving pioneers in technology, slavery, the Bill of Rights, Shakespeare, and the Bible, less than 30 percent correctly answered questions dealing with recent history and modern works of literature.

In 1985-86, for the first time ever, NAEP assessed computer competence of students. Questions covered computer technology, computer applications (such as word processing and graphics), and computer programming. Students answered fewer than half the questions correctly; even the average of those who had a computer at home and who studied computers in school was below 50 percent correct (*Indicator 1:4*). With the increasing shift to a computer-based technology in work places throughout the world, these findings are of interest to education policymakers and school officials alike.

NAEP data are valuable benchmarks in assessing student performance. However, NAEP does have its limitations: sampling is currently inadequate for State-by-State comparisons; knowledge of particular subjects (e.g., science and writing) has been assessed infrequently; and the subjects students take are not ascertained. These problems are well known. As steps are being taken to address them, future indicators based on NAEP will grow in significance.[3]

Another source of information about learning outcomes is college admissions tests (*Indicator 1:5*). Either the Scholastic Aptitude Test (SAT) or the test developed by the American College Testing program (ACT) is generally taken as part of the college application process. Total SAT scores (verbal and mathematics tests combined) have held steady since 1985, when declining scores rebounded to their 1975 level of 906. However, they remain well below the 1963 score of 980 just before

---

[3] For a discussion of recommended changes in future NAEP assessments, see National Academy of Education, *The Nation's Report Card: Improving the Assessement of Student Achievement*, (Cambridge, MA: 1987).

the period of steady decline began. Composite ACT scores have varied only slightly since 1974. Mathematics and social studies scores have not changed appreciably in the last 12 years, but fall well below the highs of 1970. The average scores on the English and natural sciences tests have varied only slightly since 1970.

SAT and ACT scores are indeed popular measures of student outcomes, but they have certain limitations as indicators of performance. For example, they are not taken by a representative sample of older secondary school-age youth, but only by college-bound students who elect to take them. Moreover, the proportion of students who take the tests varies widely among the States. Finally, whether these tests measure aptitude, achievement, or both is a matter of ongoing debate.

In discussing the availability of courses earlier, it was noted that some schools have limited offerings, particularly in certain science and mathematics courses. *Indicator 1:6* shows the possible consequences of such curriculum shortcomings. In correlating ACT scores with the number and sophistication of courses taken, test scores were generally higher when more courses had been studied. Mathematics is learned primarily in school. Thus it is especially critical to have courses offered. Students who lack the opportunity to learn are undoubtedly hampered in their ability to score well on the pre-college tests and may well be at a disadvantage in college.

Another outcome indicator addresses the success of schools in retaining students to graduation. Although firm data on dropouts are not available, there is trend information on the proportion of students who have completed high school (*Indicator 1:7*). Nationally, in 1986 almost three out of four 18- and 19-year-olds had done so. For 20- to 24-year-olds, the proportion was higher—nearly 85 percent. For the younger students, completion rates were considerably lower for blacks and Hispanics than for whites. However, completion rates for black youth aged 20 to 24 have improved since 1980 and the gap between them and their white counterparts has appreciably narrowed. In 1986, 81 percent of the black youth in this age group had a high school or high school equivalency diploma compared to 85 percent of the whites. Rates for Hispanic youth, by contrast, remain low even for this older cohort.

Conclusion

As this report documents, serious problems are confronting the schools in the form of rising enrollments, reported difficulty in hiring teachers, classroom disruption, drug abuse, and, above all, low student performance. Many of these problems are

beyond the capacity of the school to solve alone: parents, students themselves, teacher training institutions, and elected officials, and sometimes juvenile authorities and police must share in the responsibility.

But the importance of these problems has been recognized at every level of responsibility throughout the country. Indeed, the reform movement may be characterized by its vitality and the range of actors involved. Paramount among them are the States. Although some States had begun reform initiatives before 1983, the issuance of *A Nation at Risk* that year by the National Commission on Excellence in Education was a major stimulus to action. Education reform soon headed the action agendas of virtually every State.[4]

The role of the States remains strong. For example, the National Governor's Association (NGA) in 1986 launched a 5-year plan to attain certain educational improvements. These include recruiting talented teachers, promoting parent involvement and educational choice, and incorporating the use of technology in the schools. Achieving such goals assumes the commitment of all those involved in teaching and training America's children and youth. Accordingly, the governors are addressing these goals in concert with educators and other citizens.[5]

While education has experienced previous reform eras in our country's history, the current one is noted for popular demands for accountability. Interest in education indicators to document educational changes may be seen as one result of that demand. But the quality and usefulness of education indicators are limited by at least three factors. One is that defining and developing education indicators has only recently been attempted; the first Federal publication on education indicators was issued in 1985. More work on conceptualizing education indicators and indicator systems remains to be done. The second concerns the quality of the data from which education indicators may be derived. Many indicators in this volume are surrogates or place holders awaiting data from improved surveys, in particular those comparing public and private schools and those describing teachers.

The third limitation is derived from the ferment of the reform movement itself. As reforms progress and goals are refined or changed, indicators will have to be modified accordingly. For example, this volume features some reform measures such as requiring students to take more courses and increasing teacher salaries.

---

[4] U.S. Department of Education, *The Nation Responds: Recent Efforts to Improve Education*, (Washington, D.C.: 1984).

[5] National Governors' Association, *Time for Results: The Governors' 1991 Report on Education*, (Washington, D.C.: 1986) and *Results in Education: 1987*, (Washington, D.C.: 1987).

But many reforms are too localized or too new to report in a publication on national indicators. If such reforms become more widespread and if they can be linked to improved student performance, they could someday become indicator candidates.

How successfully the Nation combats its educational problems will be assessed in future editions of this report. As the concept of education indicators grows in sophistication and as surveys are better tailored to report on key measures of education, this assessment should become increasingly precise.

A. Outcomes: Student Performance

Indicator 1:1 Reading performance in grades 3, 7, and 11

- **In 1986, average reading proficiency was lower for minority students, disadvantaged urban students, and males than for nonminority students, advantaged urban students, and females at all three grade levels tested nationally.**
- **All students had particular difficulty with tasks that required them to elaborate upon or defend their judgments and interpretations about what they had read.**

Reading skills are considered basic to the education process. So when some students lag in their reading achievement, they may find it hard to participate effectively in an economy requiring increasingly sophisticated job skills.

The National Assessment for Educational Progress (NAEP)* in 1986 tested the reading performance of various groups of students in grades 3, 7, and 11 of public and private schools, and found it to be uneven. Specifically, black and Hispanic students performed at levels below that of white students. NAEP has also found that 11th graders in an academic curriculum had higher reading scores than those in general or vocational programs, and that black—and particularly Hispanic—students were less likely to be in academic programs than white students.

The NAEP results also showed that the type of community in which a student attends school is related to reading performance. Students attending school in advantaged-urban communities had substantially higher reading scores than students attending school in disadvantaged-urban communities.

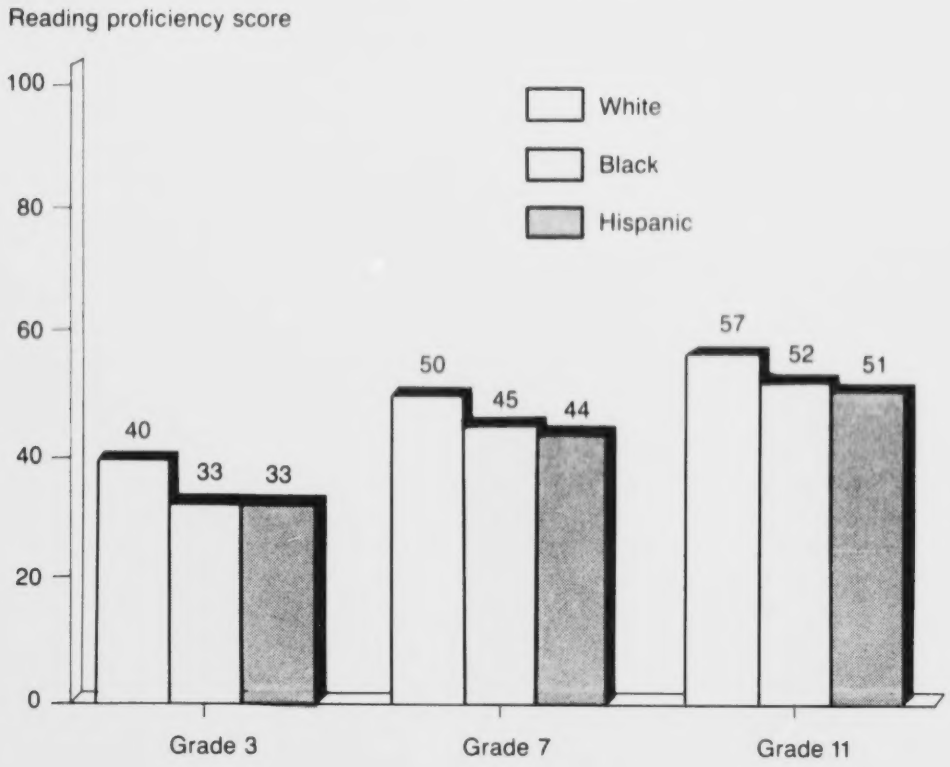
The assessment also included the opportunity to read, think, and write. Results indicated that, while the Nation's students had the skills to derive a surface understanding of what they had read, they had difficulty when asked to defend or elaborate upon this surface understanding. NAEP evaluated responses according to their complexity. About 80 percent of the third graders wrote "inadequate" or "minimal" responses to the first story task and only 18 percent produced a "satisfactory" response. Although the 11th graders performed with greater success, 36 percent wrote "inadequate" or "minimal" responses, and only 22 percent wrote "elaborated" responses. Results for the other two tasks were similarly poor.

---

*NAEP is a Congressionally mandated project that has assessed reading achievement five times, most recently in the 1985–86 school year. Because the 1985-86 test was not equivalent to the earlier tests, trend information is not available. With the 1988 assessment, adjustments will be made to the 1985–86 data to allow for comparisons with previous NAEP reading tests.

SOURCE: National Assessment of Educational Progress, *Who Reads Best? Factors Related to Reading Achievement in Grades 3, 7, and 11*, 1988.

Chart 1:1.—Average reading proficiency, by race/ethnicity: 1986



NOTE: The range of the reading proficiency scale was from 0 to 100. The average scores by grade were 38.1 for grade 3, 48.9 for grade 7, and 56.1 for grade 11.

SOURCE: National Assessment of Educational Progress, 1988.

A. Outcomes: Student Performance

Indicator 1:2 Trends in mathematics performance of 9-, 13-, and 17-year-olds

- **Between 1982 and 1986, 9- and 17-year-olds slightly increased their mathematics performance. Although 13-year-olds improved a bit between 1978 and 1982, their performance leveled off in 1986.**
- **While mathematics performance has improved, it remains low. Improvements occurred at the lower levels of the mathematics proficiency scale; most students, even at age 17, were unable to perform at the upper levels of the scale.**

Declining test scores have been a national concern since the late 1960s, when the National Assessment of Educational Progress (NAEP) began periodically assessing students' knowledge, skills, and attitudes. During a time when science and technology have played an increasingly important role in the Nation's economy and national security—and in the ability of all citizens to function in a high-technology society—mathematics and science achievement scores have declined.

Recent results from the 1986 NAEP Mathematics Assessment show an upturn in the mathematics performance of 9- and 17-year-old students.* At all three ages, improvements occurred in lower-level skills involving routine computations and measurement problems rather than more complex procedures and analytical problem solving.

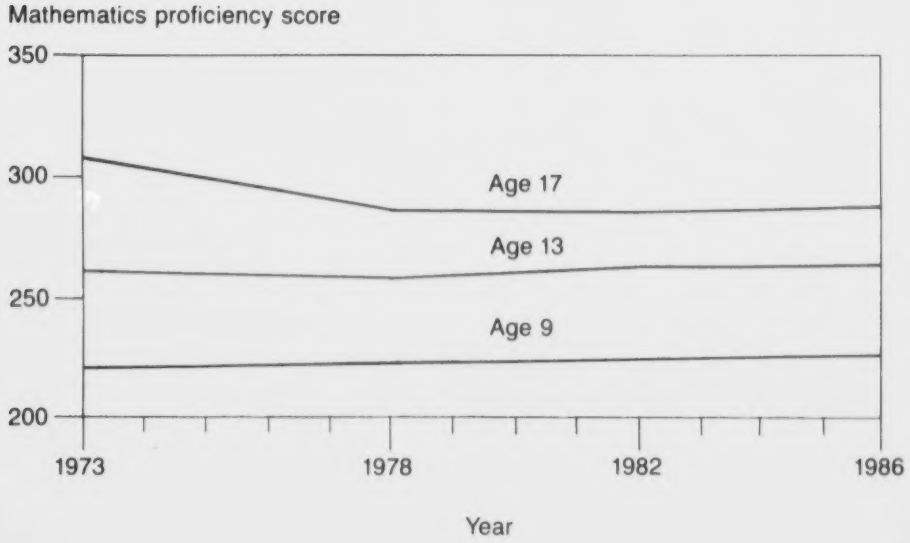
Average mathematics achievement for all three age groups remains low. One-third of 13-year-olds and one-eighth of 17-year-olds were unable to perform at the level of the mathematics scale that involves the four basic operations (addition, subtraction, multiplication, and division), problem solving, and comparing information from graphs and charts (250 scale level). Only 4 percent of 17-year-olds scored at the level involving multistep problem solving and algebra (350 scale level).

---

*NAEP has assessed mathematics achievement four times—in 1973, 1978, 1982, and 1986.

SOURCE: National Assessment of Educational Progress, *The Mathematics Report Card: Are We Measuring Up?*, 1988.

Chart 1:2.—Trends in average mathematics proficiency: Selected years, 1973-1986



NOTES:

Mathematics Proficiency Scale:
150 = Simple arithmetic facts
200 = Beginning skills and understanding
250 = Basic operations and problem solving
300 = Moderately complex procedures and reasoning
350 = Multistep problem solving and algebra

The 1973 mathematics assessment was not included in the scaling of NAEP trend data. However, a rough estimate of the 1973 mean level of student math proficiency was computed by NAEP.

SOURCE: National Assessment of Educational Progress, 1988.

Indicator 1:3 Knowledge of U.S. history and literature

- **In 1986, 80 percent or more of U.S. 11th graders had some knowledge of such aspects of history as pioneers in technology, colonial history, economic history, geography, World War II, slavery, and the Bill of Rights. Less than 30 percent correctly answered questions dealing with the approximate dates of historical events, recent history, and the women's movement.**
- **In literature, 80 percent or more of 11th graders could answer questions involving the Bible, Shakespeare, black literature, children's classics, and well-known American and English literature. Less than 30 percent identified the American and European authors of certain, mostly modern, literary works.**

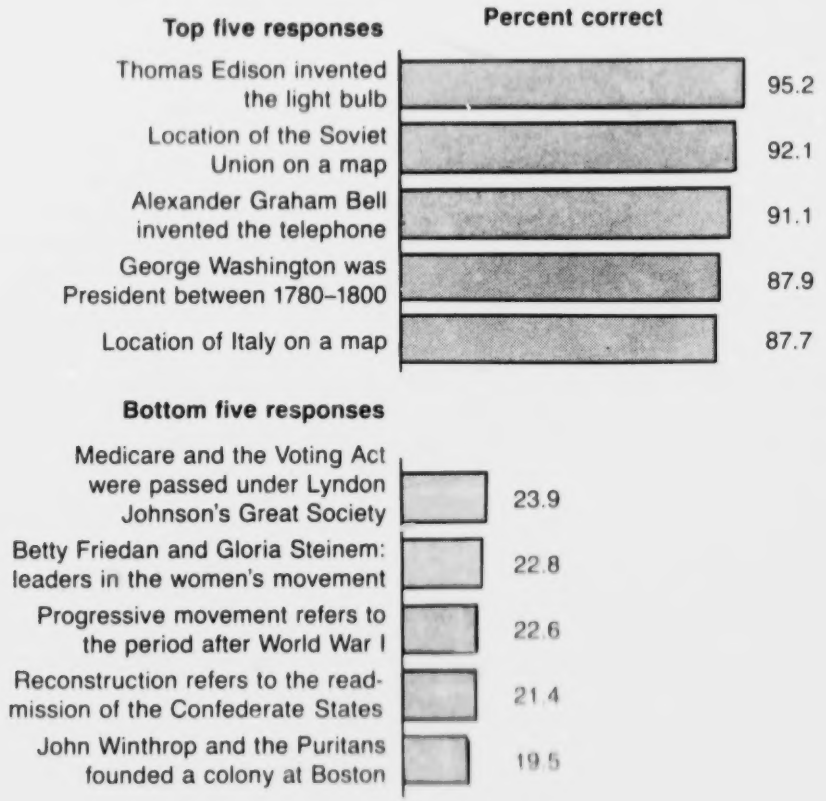
History and literature transmit and enrich our culture and serve as a basis for communication among literate people. The 1986 National Assessment of Educational Progress (NAEP) in literature and U.S. history is the first major survey of students' knowledge of specific factual content.

While no absolute standards exist for judging what all students "should" know, specific items included in the assessment provide us with a profile of student knowledge. In U.S. history, 19 out of 20 high school juniors knew that Thomas Edison invented the light bulb, that Alexander Graham Bell invented the telephone, or where the Soviet Union is on a map. However, fewer than one out of four knew when Abraham Lincoln was president or that Reconstruction refers to the readmission of the Confederate States to the Union. In literature, more than 9 out of 10 knew that Noah gathered pairs of creatures onto an Ark, that Moses led the people out of Egypt and gave the 10 Commandments, and that Romeo and Juliet's love was hindered by their feuding families. But fewer than one out of four knew that Tennessee Williams wrote *A Streetcar Named Desire* or that Alexis de Toqueville wrote about what he saw in *Democracy in America*.

Students enrolled in an academic program performed significantly better than students in either a general program or vocational/technical programs. Initial differences in ability may exist between students in these programs; moreover, students in academic programs spend more time in school studying history and literature.

SOURCE: National Assessment of Educational Progress, *Literature and U.S. History: The Instructional Experience and Factual Knowledge of High School Juniors*, 1987.

Chart 1:3.–U.S. history item responses: 1986


Top five responses
Percent correct
Thomas Edison invented the light bulb
95.2
Location of the Soviet Union on a map
92.1
Alexander Graham Bell invented the telephone
91.1
George Washington was President between 1780–1800
87.9
Location of Italy on a map
87.7
Bottom five responses
Medicare and the Voting Act were passed under Lyndon Johnson's Great Society
23.9
Betty Friedan and Gloria Steinem: leaders in the women's movement
22.8
Progressive movement refers to the period after World War I
22.6
Reconstruction refers to the readmission of the Confederate States
21.4
John Winthrop and the Puritans founded a colony at Boston
19.5

SOURCE: National Assessment of Educational Progress, 1987

Indicator 1:4 Computer competence in grades 3, 7, and 11

- **In a 1985–86 assessment of computer competence, students in each of grades 3, 7, and 11 averaged less than 50 percent correct on the test items.**
- **Even students who had used a computer, studied computers in school, or had one at home generally averaged under 50 percent correct.**

America's prominence in the world economy and its national security have become tied to computer-based technology. In 1983, the National Commission on Excellence in Education in *A Nation at Risk* brought increased attention to computer science by recommending it be required of all high school students as part of the "Five New Basics" along with English, mathematics, science, and social studies.

Recognizing the importance of computer skills for employment opportunities and productivity, administrators of the National Assessment of Educational Progress included an examination of computer competence in selected grades during school year 1985–86. The students' competence was tested in three areas: (a) computer technology, (b) computer applications (e.g., word processing and graphics), and (c) computer programming. Students generally had difficulty answering questions on the assessment. On average, 3rd graders could only answer about 3 out of 10 items correctly; 7th graders, 4 out of 10; and 11th graders, fewer than 5 out of 10.* Low scores in using applications and in programming seem to be related to the low frequencies of computer use in most classrooms. For example, about two-thirds of students assessed had never written computer programs.

Students who had access to or training on computers scored higher. Specifically, the experiences of having ever used a computer, studying computers in school, and having access to a computer at home are positively related to computer competence. Nevertheless, even the average performance of advantaged students generally fell below 50 percent. Perhaps the most surprising finding was that improvement in test scores associated with school and home computer use was so small.

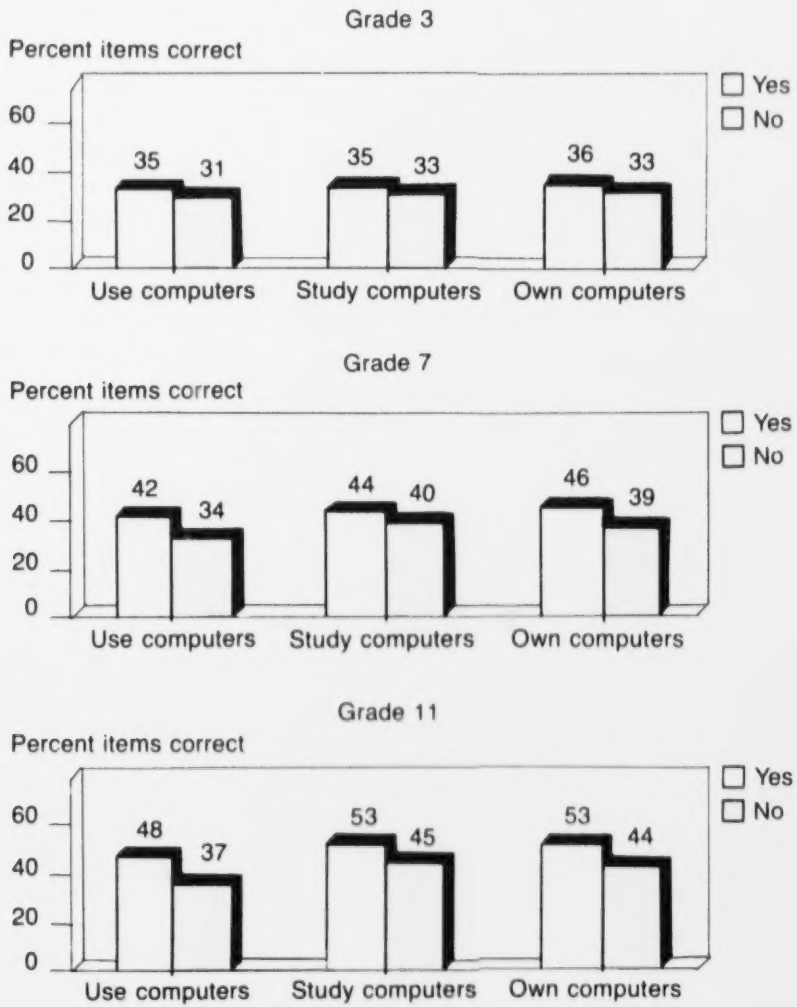
---

* The overall performance index appearing on the chart and corresponding table was derived by computing the mean percent correct for all items at that grade.

Note: Some items in the assessment, but not shown on this graph, were common from grade to grade or across all grades. For these items, performance was higher at the higher grades.

SOURCE: National Assessment of Educational Progress, *Computer Competence: The First National Assessment,* draft final report, November 1987.

Chart 1:4.–Performance on NAEP computer assessment, by grade and computer experience: School year ending 1986



SOURCE: National Assessment of Educational Progress, *Computer Competence: The First National Assessment*, draft final report, November 1987.

Indicator 1:5 College entrance examination scores

- **After years of decline, Scholastic Aptitude Test (SAT) scores began rising in 1982; by 1985, the verbal and mathematics tests combined returned to the 1975 level of 906 – still 74 points below their 1963 high. The combined score has not changed since 1985.**
- **American College Testing (ACT) English scores declined until the mid-1970s and mathematics scores declined to a low point in 1983. Both English and mathematics scores have risen since; however, 1987 scores varied only slightly from 1985 and 1986.**
- **Students attending private high schools generally score higher than public school students on the ACT and verbal SAT tests. However, scores on the SAT mathematics tests are similar for both public and private high school students.**

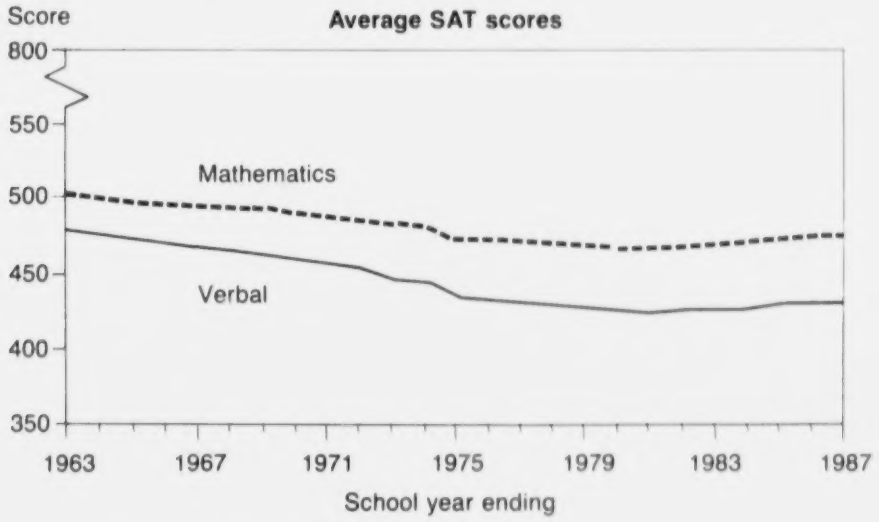
The tests taken most frequently by college-bound students are the Scholastic Aptitude Test (SAT) and the American College Testing Program Assessment (ACT). These tests are designed to predict how well students might perform in college and were not intended as measures of the outcomes of schooling.

College entrance examination test scores declined substantially during the 1960s and 1970s. SAT scores declined 90 points from 1963 to 1980 but in 1982 began to rise. By 1985, the total score for the mathematics and verbal tests combined had risen 16 points to 906, representing a return to 1975 levels. ACT English scores had declined from 18.5 in 1970 to 17.5 in 1976; by 1983, ACT mathematics scores had declined 3.1 points to 16.9. ACT scores rose to 18.5 in English and 17.3 in mathematics in 1986.

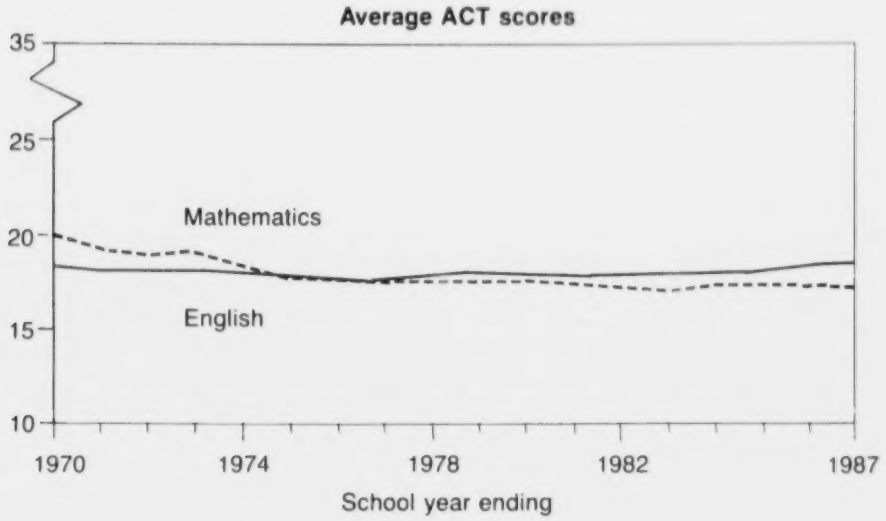
Scores on the SAT and ACT are reported separately for public and private high school students. Since 1981, private high school students have generally scored higher than public high school students on the ACT and verbal SAT examinations. In 1987, for example, students attending religiously affiliated private high schools received an average SAT verbal score of 440 and students attending independent private high schools received an average SAT verbal score of 473. Public high school students, however, scored an average of only 428. In mathematics, students in religiously affiliated private high schools received an average SAT score of 469, while those in independent private high schools averaged 519. The average SAT math score for public high school students was 476.

SOURCES: College Entrance Examination Board, *National Report: College-Bound Seniors*, various years. The American College Testing Program, *The High School Profile Report, Normative Data*, various years.

Chart 1:5.–Trends in college entrance examination scores



SOURCE: The College Entrance Examination Board.



SOURCE: The American College Testing Program.

Indicator 1:6 Academic coursework and achievement

- **Students who take more courses in a subject generally score higher on the American College Testing (ACT) test in that subject than students who take fewer courses.**
- **These increases in average test scores were much larger for mathematics and natural sciences than for English and social studies.**

The 1980s have been a period of renewed concern about the adequacy of academic preparation for postsecondary education and employment. Following publication of *A Nation at Risk*, a number of States passed legislation increasing the required coursework for high school graduation and sometimes for college entrance.[1]

A number of studies have shown that course-taking affects achievement.[2] This connection may be seen in the fall 1985 American College Testing (ACT) Program scores. Students with differing amounts of preparation in four subject areas took the ACT tests in those subjects—English, mathematics, natural science, and social studies. On average, high school seniors who had taken more coursework did score higher on the corresponding test, with the exception of a sixth or seventh course in social studies. Students who ranked higher in their class tended to take more coursework.

Similar results were found in a study of Scholastic Aptitude Test (SAT) examinees. SAT scores were compared for students with differing amounts of coursework in six academic subjects. Both the number of courses taken and the level of the course were related to scores. For example, SAT mathematics scores increased with the level of mathematics course taken. Presumably, students taking higher level courses such as calculus have also taken more courses.

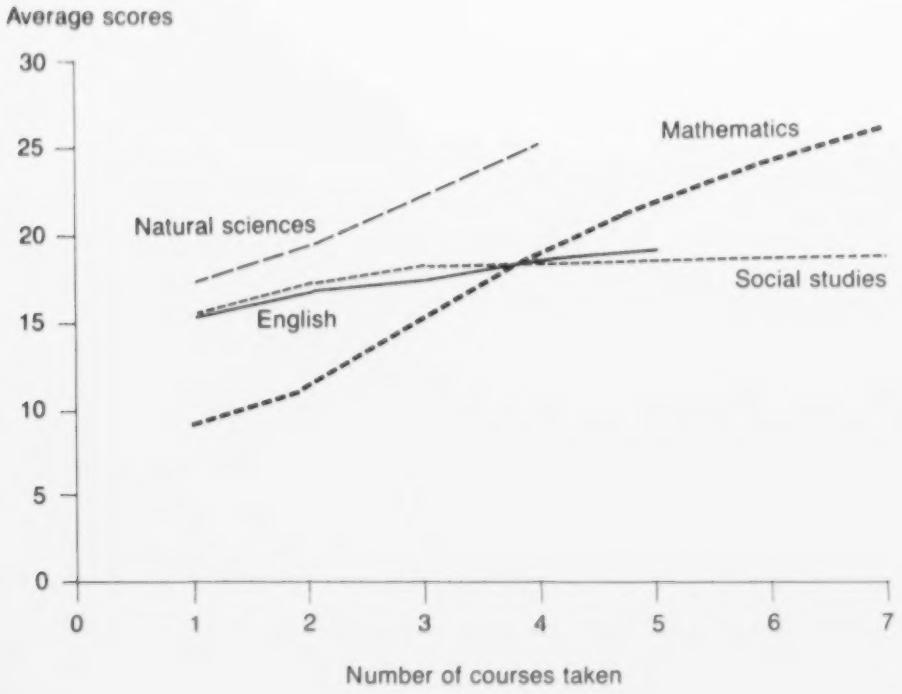
---

[1] The National Commission on Excellence in Education, *A Nation at Risk: The Imperative for Educational Reform.* (Washington, D.C.: U.S. Department of Education, 1983.)

[2] For example, K. L. Alexander and A. M. Pallas, "Curriculum Reform and School Performance: An Evaluation of the 'New Basics'," *American Journal of Education 92,* (1984): 392–420; W. H. Schmidt, "High School Course-taking: Its Relationship to Achievement," *Journal of Curriculum Studies 15,* (1983): 311–332; and others.

SOURCE: College Entrance Examination Board, *National Report: College-Bound Seniors,* 1987. J. Laing, H. Engen, and J. Maxey, "The Relationship of High School Coursework to the Corresponding ACT Assessment Scores," *ACT Research Report 87-3,* (1987).

Chart 1:6.—Average ACT scores, by number of courses taken in subject: 1985



SOURCE: Laing, Enger, and Maxey, *ACT Research Report 87-3*, 1987.

A. Outcomes: Transitions

Indicator 1:7 High school completion, by race and ethnicity

- **Nationally, almost three-quarters of all 18- and 19-year-olds have completed high school.**
- **The proportion of 20- to 24-year-olds who have completed high school has remained around 84 percent since 1974.**
- **The proportion of black youths, aged 18 to 19 and 20 to 24, who have completed high school has increased steadily since 1974. The rates for both black and Hispanic youth still lag far behind those of whites.**

One important measure of this Nation's success in educating its youth is the proportion of its students who complete high school. Those who drop out may not obtain sufficient knowledge and skills to function productively in our society.

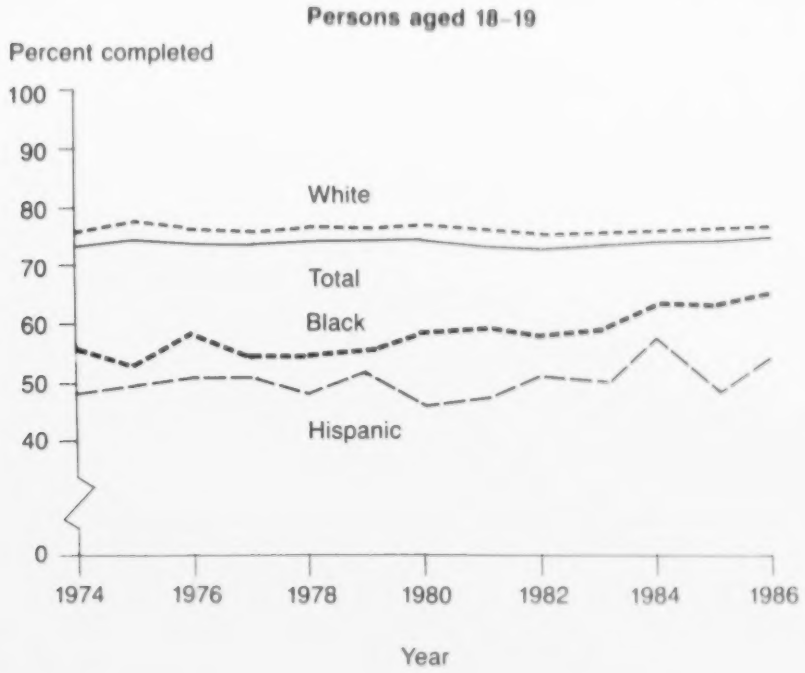
The public generally expects an 18- or 19-year-old to have a high school diploma or its equivalent, and most do. However, black and Hispanic youth lag behind white youth in this attainment. For example, in 1986, 77 percent of white 18- to 19-year-olds completed secondary school, but only 65 percent of black youth and 55 percent of Hispanic youth in this age group did so. However, blacks 20–24 years old are now almost as likely as whites to have completed high school.

Many students take longer to complete their high school education. For example, the percentage of 20- to 24-year-olds who have completed secondary school is about 10 percentage points higher than for 18- to 19-year-olds. For the two age groups, completion rates were:

	Age: 18–19			Age: 20–24		
Year	White	Black	Hispanic	White	Black	Hispanic
	Percent of age group			Percent of age group		
1974	76	56	49	86	72	59
1980	76	59	46	85	74	57
1986	77	65	55	85	81	62

SOURCE: U.S. Department of Commerce, Bureau of the Census, "School Enrollment – Social and Economic Characteristics of Students, October [various years]," *Current Population Reports*, Series P-20; and unpublished tabulations.

Chart 1:7.—Trends in high school completion rates, by race and Hispanic origin: 1974–1986



NOTE: Hispanics may be of any race.

SOURCE: Bureau of the Census, *Current Population Reports*.

B. Resources: Fiscal Resources

Indicator 1:8 Expenditure per pupil in public schools

- **Between the 1949–50 and 1985–86 school years, current expenditure per pupil in constant dollars more than tripled, from $960 to $3,752 per pupil.**
- **Between 1977–78 and 1981–82, current expenditure per pupil in constant dollars remained relatively unchanged, but then began rising.**

One frequently used measure of financial resources available to public schools is per pupil expenditure. This measure is a ratio of average daily attendance and expenditure for education. Data on trends in per pupil expenditure provide valuable information to policymakers at all levels of government on the overall disposition of resources. They do not provide information about individual school district expenditures, the quality or type of resources provided, or their impact on learning.

This indicator examines current and total expenditure per pupil over time. Current expenditure includes expenditure for operating local public schools, including such items as salaries, fixed charges, student transportation, books and materials, and energy costs. Excluded are long-term expenses of capital outlay and interest on school debt, as well as community service. Total expenditure includes current expenditure plus these long-term expenses. Total and current expenditure may be expressed in both current and constant dollars, the latter adjusted for inflation.*

In constant dollars, current expenditure has grown at a faster rate than total expenditure, 291 versus 242 percent between school years 1949–50 and 1985–86, respectively. The growth rate of current expenditure, however, was not uniform. After rising steadily from 1949–50 to 1977–78, per pupil expenditure in constant dollars leveled off and remained relatively unchanged until 1982-83, when it began rising once again. (See *Indicator 1:17* for public school enrollment from 1969).

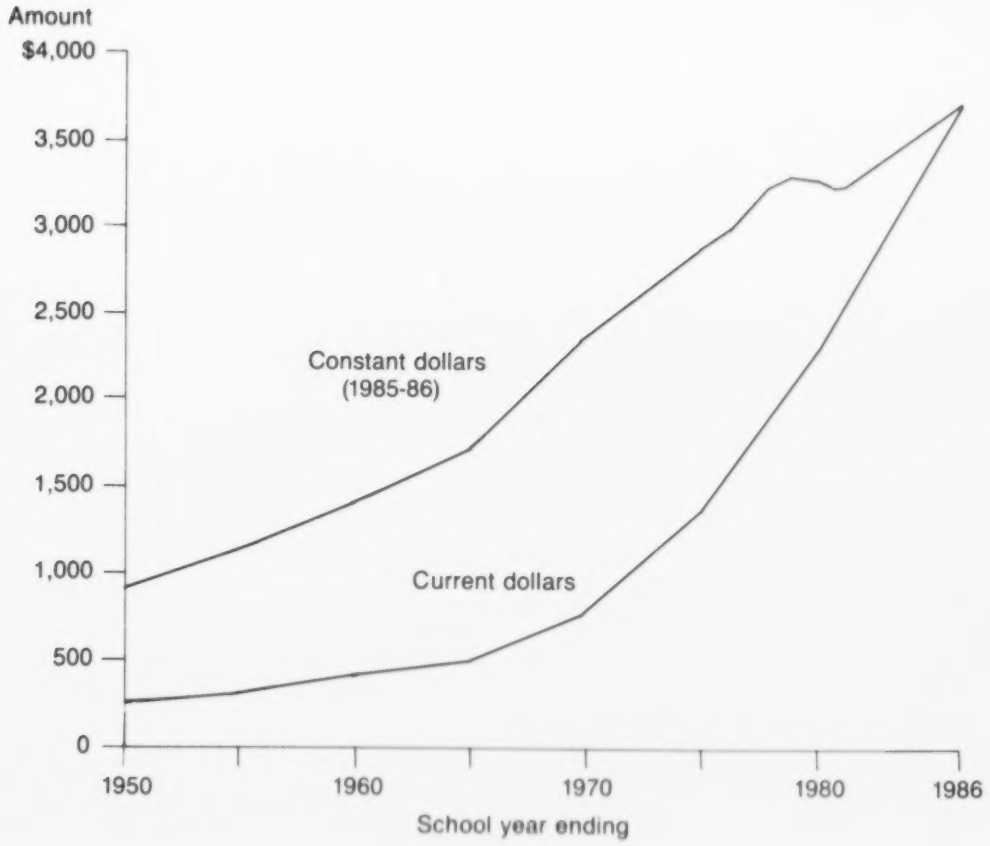
Trends in current expenditure per pupil vary widely from State to State and may not necessarily reflect national patterns. While current expenditure per pupil in the United States rose almost 60 percent in constant dollars between school years 1969–70 and 1985–86, State-level percentage increases varied during the same period from 155 percent (Alaska) to 33 percent (Utah).

---

* Based on the Consumer Price Index for urban wage earners, prepared by the Bureau of Labor Statistics, U.S. Department of Labor. Data adjusted from a calendar-year to a school-year basis.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*, various years; *Revenues and Expenditures for Public Elementary and Secondary Education*, various years; Common Core of Data survey, various years; and unpublished data.

Chart 1:8.—Trends in current expenditure per pupil in average daily attendance in public schools: Selected school years ending 1950-1987



SOURCE: National Center for Education Statistics, *Statistics of State School Systems* and *Revenues and Expenditures for Public Elementary and Secondary Education*, Common Core of Data survey. National Education Association, *Estimates of School Statistics*.

Indicator 1:9 Public school revenues

- **State and local governments have been the primary source of revenues for public elementary and secondary education, while the Federal share has remained small.**
- **In 1979, an historic shift occurred when the States' share of revenues rose above the locals' share for the first time.**
- **Between the 1919–20 and 1986–87 school years, local governments' share of total revenues fell from 83 percent to 44 percent.**

Public schools obtain revenues from three principal sources: local, State and Federal governments. The share that each contributes is determined by many factors, including the perceptions of its role in supporting public education; the extent to which it taxes itself; the size of its tax base; and the competing demands on its tax revenues. Historically, local governments have been limited primarily to property taxes and State grants as a basis for raising funds. In recent years, localities in some States have experienced difficulty in using property taxes for additional funds (e.g., Proposition 13 in California). By comparison, most State governments use both the sales tax and income tax as revenue-raising vehicles.

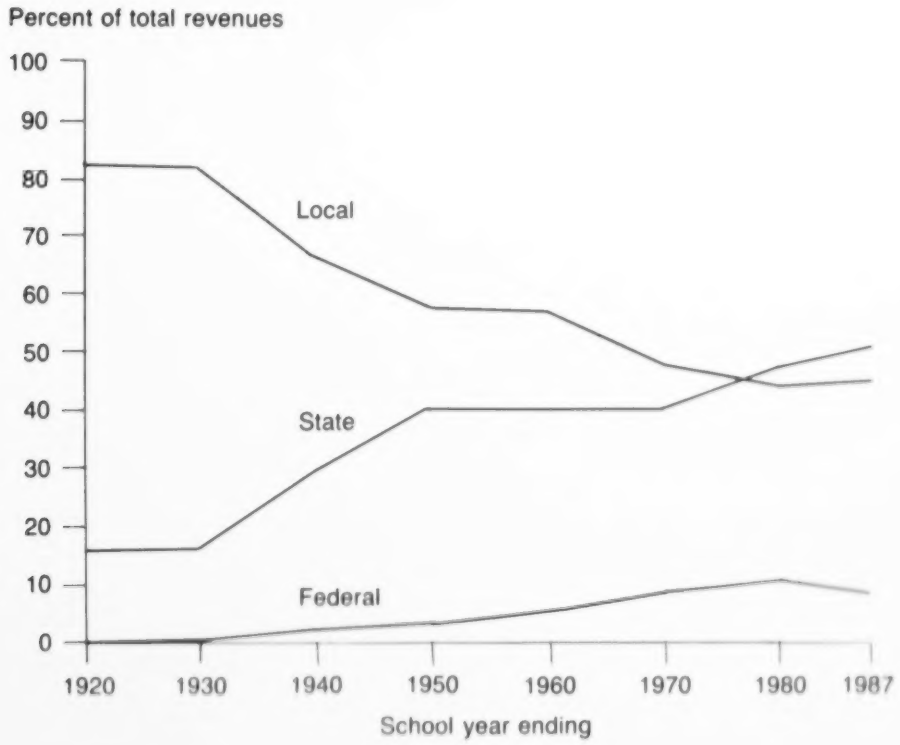
Through at least the 1973–74 school year, local governments provided more than 50 percent of all revenues for local elementary and secondary schools. Reflecting school finance reform efforts, including court cases, by the 1978–79 school year, more funds were provided by State governments than any other source.

Below is a summary of the sources of public school revenues from school years 1959–60 through 1986–87.

School year ending	Percent of revenue from:		
	Local	State	Federal
1960	56	39	4
1970	52	40	8
1980	43	47	10
1987	44	50	6

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on Common Core of Data survey and its predecessors). National Education Association, *Estimates of School Statistics, 1986–87,* 1987, copyrighted (all rights reserved).

Chart 1:9.—National trends in revenue sources for public elementary and secondary education: Selected school years ending 1920-1987



SOURCES: National Center for Education Statistics, *Digest of Education Statistics, 1988*. National Education Association, *Estimates of School Statistics, 1986–87*.

B. Resources: Fiscal Resources

Indicator 1:10 National index of public school revenues per pupil in relation to per capita income

- **The national index gauging per pupil revenues as a percentage of per capita income has more than doubled since 1929–30.**

Countries often report the percentage of GNP devoted to education. The national index presented here is a refinement of that figure. The numerator is revenues per pupil, a measure of the resources or services accorded the typical pupil. The denominator becomes income per capita, a measure of the ability to pay of the typical taxpayer. Therefore, the index reflects what the average student receives relative to the typical taxpayer's ability to pay.

Four factors make up this index: 1) the number of pupils enrolled in public schools, 2) public education revenues, 3) total personal income, and 4) the total population. Between school years 1929–30 and 1986–87, the national index more than doubled. This indicates that over twice the funds were available per student in 1986–87 as a percentage of per capita income than in 1929–30. After dropping almost 1 percentage point (to about 25) in 1981–82, the index rebounded to over 27.6 in 1986–87.

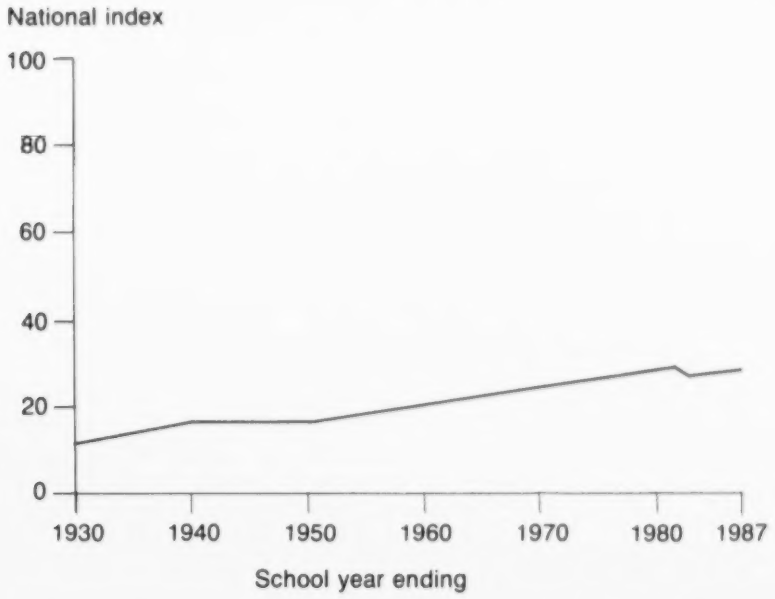
Changes over time in the overall index can be due to circumstances affecting any of the four factors. An increase in the index means either that per pupil revenues have grown relative to ability to pay, or that per capita income has declined relative to revenues per pupil. Conversely, a decline in the index demonstrates either that the resources accorded the typical pupil have declined relative to per capita income or that ability to pay has increased relative to per pupil revenues. For example, the index rose between school years 1929–30 and 1939–40 because 1) enrollments slightly decreased, 2) total revenues increased, and 3) total personal income fell, while 4) total population increased.

---

*Per pupil education revenues are the ratio of total public school education revenues to public school enrollment. Per capita income is the ratio of total personal income to total population. This formula can also be expressed, therefore, as a function of four variables:

$$\frac{\dfrac{\text{public education revenues}}{\text{total personal income}}}{\dfrac{\text{public school enrollment}}{\text{total population}}} \times 100$$

Chart 1:10.–Trends in the national index of public school revenues per pupil in relation to per capita income: Selected school years ending 1930-1987



SOURCE: National Center for Education Statistics, *Digest of Education Statistics, 1988*, 1988. National Education Association, *Estimates of School Statistics 1986–87*, 1987. Bureau of Economic Analysis, *State Personal Income*, 1984, and Regional Economic Information System, August 1987.

TEXT NOTE: This formula does not include private school enrollments or revenues, nor does it take into account other types of support of the public schools, such as volunteer work by parents.

TEXT SOURCES: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on Common Core of Data Surveys, various years); and unpublished data. National Education Association, *Estimates of School Statistics, 1986–87*, 1987, copyrighted (all rights reserved). U.S. Department of Commerce, Bureau of Economic Analysis, *State Personal Income: 1929–82*, 1984, and *Regional Economic Information System*, August 1987.

B. Resources: Human Resources

Indicator 1:11 Staff employed in public school systems

- **Since 1959–60, the proportion of classroom teachers has declined from 65 percent to 53 percent of total staff in the public schools.**
- **In the past 5 years, the composition of public school staff has changed little.**

To operate today's public school systems, districts employ a large variety of personnel besides teachers, from district-level administrators to building maintenance workers. Diverse factors may cause the number and categories of staff to change. These factors include demographic changes as well as policy decisions at all levels of government. Examples include: (1) changes in pupil enrollment, including an influx of students with special needs; (2) changes in the pupil/teacher ratio resulting from school policy modifications; (3) legislative requirements affecting instruction or school operations; (4) the increased use of different types of instructional personnel, such as teacher aides; and (5) the addition of noninstructional tasks.

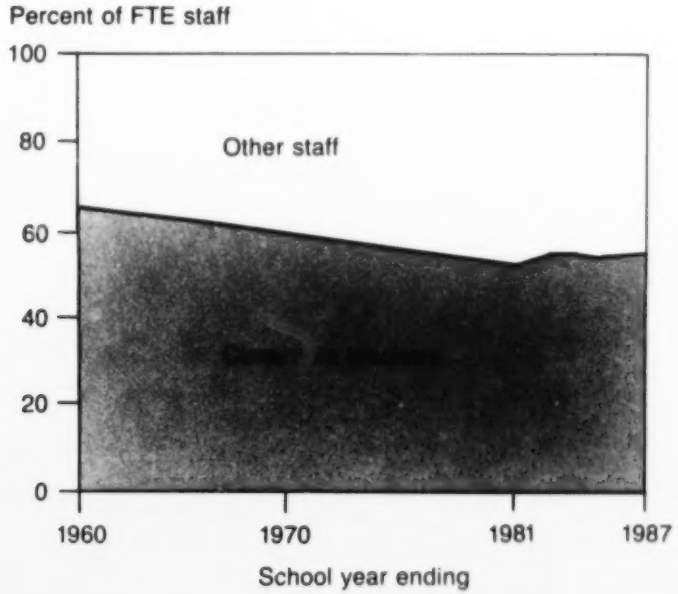
Over the last few decades, the number and types of staff employed by the public school systems of this country have changed considerably. Between school years 1959–60 and 1986–87, total full-time-equivalent (FTE) staff doubled (from about 2 million to a little over 4 million). The number of teachers employed grew substantially (from nearly 1.4 million to more than 2.2 million). Despite this growth, the percentage of teachers in relation to the total staff declined during this period from 65 percent to 53 percent as the hiring of other types of staff increased.

In school year 1986–87, school systems employed about 4.2 million FTE staff. If instructional support staff (instructional aides, guidance counselors, and librarians) are added to classroom teachers, the dominant category, instructional personnel, accounted for more than 63 percent of total staff. Administrators and administrative support staff comprised 13 percent, while other support staff (e.g., bus drivers, security officers, and cafeteria workers) made up the remaining 24 percent.

Over the last 5 years, the percentages of classroom teachers, instructional support, administrators and administrative support, and other support have changed very little. But the number and composition of public school staff could change in the next several years in view of a projected increase in public elementary school enrollment, new teacher hiring policies and practices, and possible changes in pupil/teacher ratios (see *Indicators 1:13, 1:14,* and *1:17*).

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems,* various years; and special tabulations, 1987.

Chart 1:11.—Classrooom teachers as a proportion of total public school staff: Selected school years ending 1960, 1970, 1981, and 1983-1987



SOURCE: National Center for Education Statistics, *Statistics of State School Systems*; and special tabulations, 1987.

Indicator 1:12 Average annual salary of public school teachers

- **Since 1980–81, average teacher salaries, adjusted for inflation, have risen almost 18 percent after a decline in the 1970s.**
- **Teacher salaries at both the elementary and secondary levels have risen at about the same rate (18 percent and 17 percent) in the 1980s.**
- **In 1987, teachers regained the buying power they had in the early 1970s.**

The first wave of education reform in the United States, beginning in the early 1980s, was characterized by increased regulation of education, including the teaching profession. By contrast, the current second wave of reform has emphasized the need to improve education by enhancing the status and professionalism of teachers.[1] In this context, many State and local school districts have raised teacher salaries in the hope of attracting and retaining more and better teachers.

During the 1970s, the buying power of the average teacher declined. By contrast, salaries for both elementary and secondary school teachers rose between school years 1980–81 and 1986–87. Average salaries, when adjusted for inflation,[2] increased by 18 percent; unadjusted, they grew by over 50 percent.

Education officials across the country are currently experimenting with teacher salary structures, creating new career steps, career ladders, merit pay schemes, and new positions with greater authority and responsibility. If these experiments prove successful and become widespread, teacher salaries should continue to rise.[3]

---

[1] L. Darling-Hammond and B. Berry, *The Evolution of Teacher Policy*, Center for Policy Research in Education, May 1987.

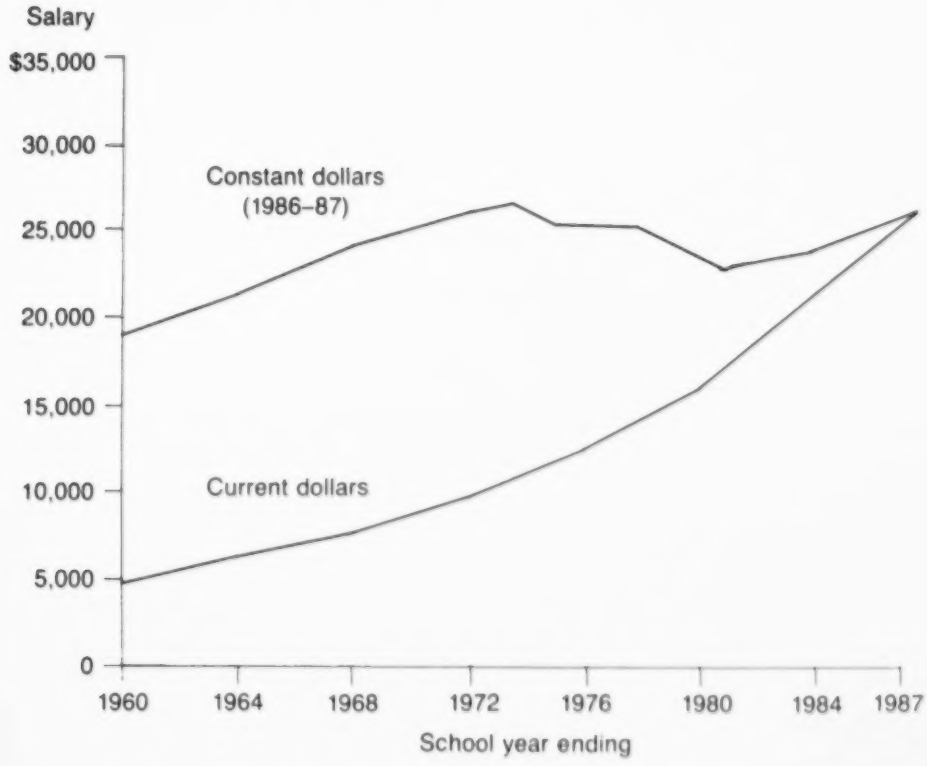
[2] Based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, U.S. Department of Labor, and adjusted to a school-year basis.

[3] Carnegie Forum on Education and the Economy, *A Nation Prepared*, 1986.

NOTE: These salary data of public school teachers are from the National Education Association. Salary data are also collected and published by the American Federation of Teachers. Their latest research report is *Survey & Analysis of Salary Trends, 1987.*

SOURCE: National Education Association, *Estimates of School Statistics 1986–87*, 1987, copyrighted (all rights reserved).

Chart 1:12. – Trends in average annual salary of teachers in the public schools: Selected school years ending 1960–1987



SOURCE: National Education Association, *Estimates of School Statistics*, various years.

B. Resources: Human Resources

Indicator 1:13 Pupil/teacher ratios

- **Pupil/teacher ratios are highest in elementary schools and lowest in combined schools and increase with school enrollment.**
- **When school size and level are taken into account, pupil/teacher ratios in public and private schools are not significantly different.**
- **Between 1971 and 1988, pupil/teacher ratios in public schools declined almost 21 percent, from 22.3 to 17.7 students per member of the instructional staff.**

One measure of teacher workload, or the number of students a teacher teaches, is pupil/teacher ratio. It reflects the relationship between the number of students enrolled and the number of (full-time-equivalent) instructional personnel[1] available to teach them. Another measure is class size, which is based on reports from classroom teachers about the number of students in their classrooms. Workload is of interest because of the popular assumption that students in smaller classes benefit from greater attention and that higher achievement will result. Research data, however, have generally not supported this assumption.[2]

In the mid-1980s, pupil/teacher ratios varied by school size and level. As the chart shows, elementary schools had considerably higher ratios than secondary schools, whose ratios in turn were somewhat higher than combined schools'. Moreover, pupil/teacher ratios increased with school size; that is, larger schools enrolled more students per teacher. When both level and size of schools are taken into account, private school pupil/teacher ratios were not different from those of public schools.[3]

Public school pupil/teacher ratios have shown a steady decline since 1971, when the ratio was 22.3 to 1 in the public schools. In 1988, the ratio is estimated to be down to 17.7 to 1, a decline of almost 21 percent.

---

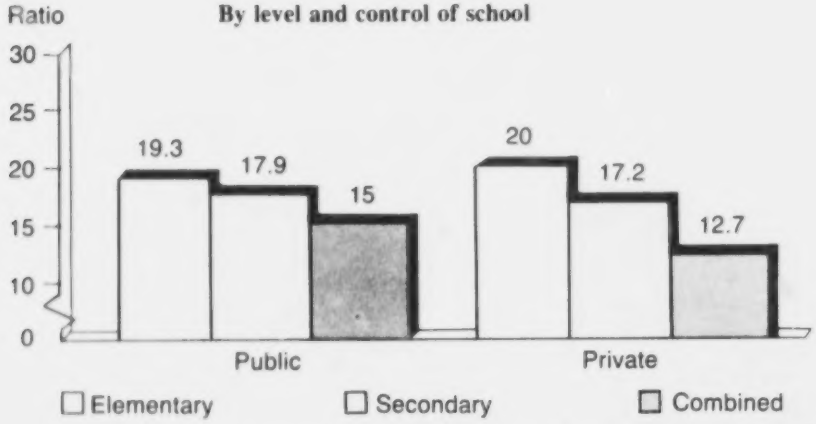
[1] Full-time-equivalent teachers include not only regular classroom teachers but also those – such as art, music, and special education teachers – who do not have regular classroom assignments, but exclude staff providing educational services outside the classroom, such as counselors and librarians.

[2] U.S. Department of Education, Programs for the Improvement of Practice, *Class Size and Public Policy: Politics and Panaceas*, March 1988.

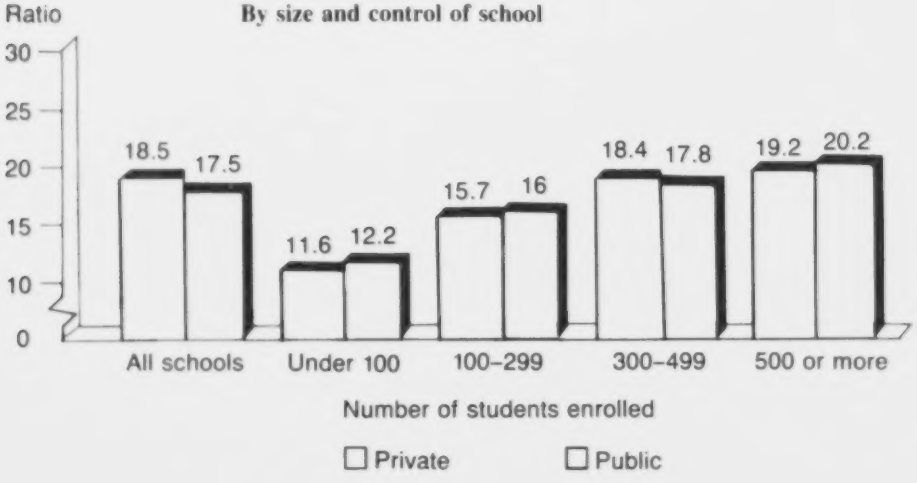
[3] In public schools, the decrease in ratios from elementary to secondary to combined levels was most notable in small schools. It was smaller in medium-sized schools and almost absent in large schools. For private schools, the reverse was the case – the association between level and pupil/teacher ratio was strongest in the largest schools, those with 500 or more students.

SOURCE: U.S. Department of Education, Center for Education Statistics, 1985–86 Private School Survey and 1985 Public School Survey, unpublished tabulations.

Chart 1:13.—Pupil/teacher ratios in public and private schools



NOTE: Elementary schools contain no grade higher than 8. Secondary schools contain no grade lower than 7. Combined schools contain all other grade spans, such as K-12 or ungraded.



SOURCE: National Center for Education Statistics, 1985–86 Private School Survey and 1985 Public School Survey.

B. Resources: Human Resources

Indicator 1:14 Demand for new hiring of public school teachers

- **The projected annual demand for new hiring of elementary school teachers in public schools is expected to jump between 1988 and 1989 and then stabilize somewhat through 1997.**
- **For secondary school teachers, the projected annual demand is expected to increase rapidly from 1988 until 1995 before declining.**

Projections of the need for hiring teachers in the next decade are useful to school officials, policymakers, and potential teachers. Demand is affected by fluctuations in student enrollment, changes in pupil/teacher ratio, and teacher turnover, including retirement.[1]

Demand for new hiring is expected to swell more than 35 percent by 1995, when it will peak. Most of this increase can be attributed to a rise of almost 80 percent in new hiring at the secondary school level between 1988 and 1995. While secondary schools will seek to fill 48,000 teaching slots this fall, about 86,000 positions will be open in 1995. Larger enrollments should contribute to greater demand for new hiring of elementary school teachers earlier, in the late 1980s, but should level off slightly in the 1990s. New hiring at the elementary level over the projection period should rise by 11 percent. Actual numbers of annual new hires for public elementary schools are expected to remain consistently higher than those for secondary public schools between 1988 and 1997.

Depicted are national trends. But demand for new hires varies by geographical location and subject area as States experience different rates of teacher turnover and of enrollment growth. Those recruited would include new college graduates, teachers obtaining certification via alternative routes, graduates in earlier years who are qualified but never taught, and former teachers returning to the profession.[2]

---

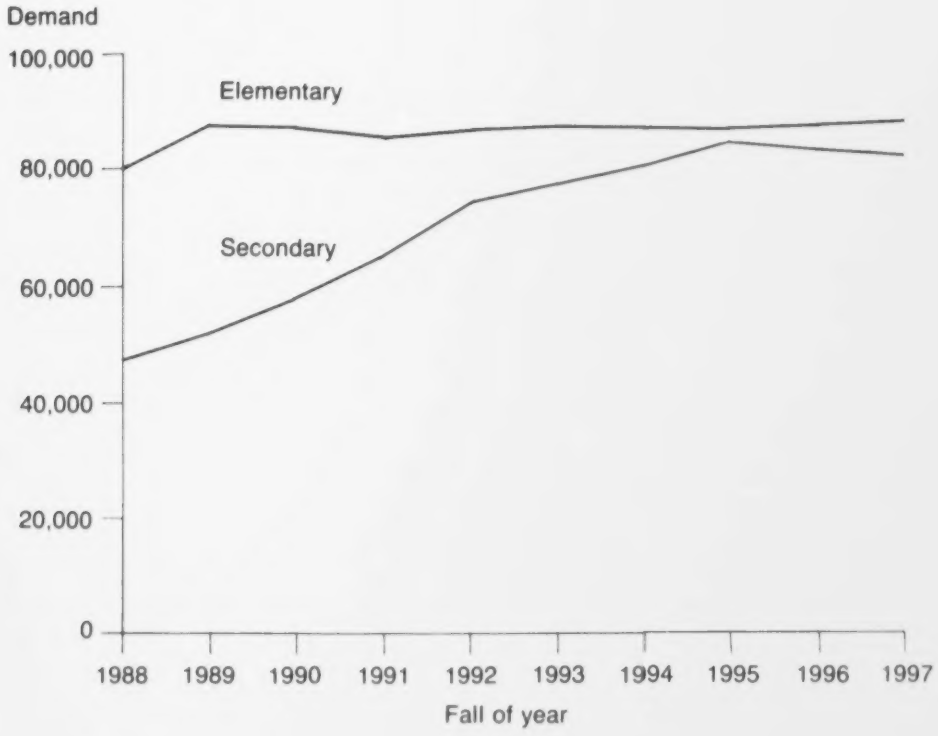
[1] These projections assume teacher turnover rate to be 4.9 percent at the elementary level and 5.6 percent at the secondary level (Bureau of Labor Statistics, unpublished tabulations). Turnover accounts for a far greater share of new hiring than do other factors, including enrollment increases.

[2] National Research Council, *Toward Understanding Teacher Supply and Demand.* (Washington, D.C.: National Academy Press, 1987), p. 3.

NOTE: Projections are substantially revised from previously published figures due to changes in projection methodology by the National Center for Education Statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1997–98,* forthcoming.

Chart 1:14.–Projected demand for new hiring of teachers, by level: Fall 1988–1997



SOURCE: National Center for Education Statistics, *Projections of Education Statistics to 1997–98*, forthcoming.

Indicator 1:15 Difficulty in hiring fully qualified high school teachers

- **Over half of public and private high school principals surveyed in 1985–86 reported that their schools had trouble hiring fully qualified teachers in physics, chemistry, computer science, mathematics, and foreign languages.**
- **Rural high school principals were more likely than suburban principals to report difficulty in recruiting qualified mathematics, biology, earth science, special education, and general science teachers.**

The ease with which teaching positions are filled varies for many reasons. For a prospective teacher, certain geographic areas or types of communities may be seen as more or less attractive. Incentives and benefits packages can also influence the decision to accept employment. Graduates in some disciplines may more readily obtain better-paying jobs in business and industry.[1] Clarifying problems in recruitment may help define the need for new policies by schools, school boards, and others committed to developing a cadre of qualified teachers.

Public and private school principals who were in the market for teachers had difficulty filling vacancies with fully qualified teachers in several subjects.[2] Almost three quarters of the principals seeking to fill physics positions had trouble finding qualified applicants. In addition, over 60 percent of the principals surveyed had difficulty hiring chemistry and computer science teachers and over half had difficulty hiring mathematics and foreign language teachers. Almost none of the principals reported having trouble hiring qualified social studies teachers.

Rural school principals reported more difficulty in hiring fully qualified teachers of mathematics, biology, earth science, special education, and general science than suburban school principals. In some subjects, the difference was quite large. Biology, for example, is a course virtually all high schools offer (see *Indicator 1:25*). Yet half of the rural school principals reported difficulty versus only 13 percent of suburban school principals. Principals in small schools also reported having more difficulty in hiring biology teachers and foreign language teachers than principals in large schools.

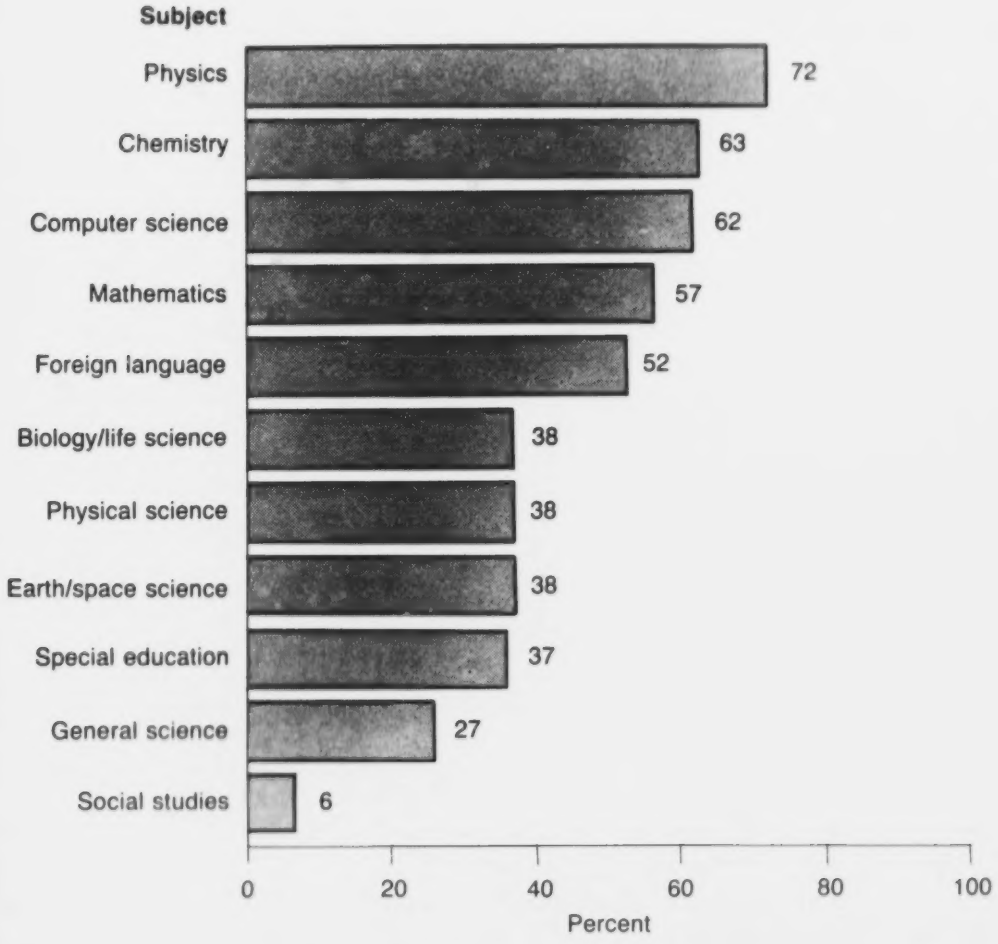
---

[1] See also Rolf K. Blank, "Science and Mathematics Indicators: Conceptual Framework for a State-Based Network," Council of Chief State School Officers, Washington, D.C., December 1986.

[2] The survey offered no definition of the term "fully qualified teachers" and provided no guidance to the principals on how to interpret this question.

SOURCE: Iris R. Weiss, *Report of the 1985–86 National Survey of Science and Mathematics Education,* Research Triangle Institute, 1987; and personal communication with the author.

Chart 1:15.—Percent of high school principals who reported difficulty in hiring fully qualified applicants for teaching vacancies, by subject: School year ending 1986



SOURCE: National Science Foundation, National Survey of Science and Mathematics Education, 1985–86.

C. Context: Student Characteristics

Indicator 1:16 Public and private school enrollment trends

- **After a period of relative stability in the early 1980s, public elementary school enrollment rose in 1986, while private elementary school enrollment remained essentially unchanged.**
- **Public high school enrollment rose during the early and mid-1970s but then began a downward trend through the early 1980s and has stabilized since; private high school enrollment changed little during this period.**

Education in the United States today benefits from long historical traditions regarding funding and control of its schools. The tradition of tax support for public education is complemented by a history of private funding of private schools sponsored by religious organizations and nonparochial, or independent, groups.

Elementary school enrollment dropped sharply in both public and private schools in the 1970s, but changed little during the first half of the 1980s. An increase in public elementary enrollment occurred in 1986. High school enrollment in public schools rose in the early to mid-1970s and then turned downward, continuing on that path through the early 1980s. It has stabilized since.[1] Private high school enrollment has remained relatively stable since 1970.[2]

Relative to total enrollment, the percentage of private school enrollment has remained fairly stable since 1970. In 1986, almost one in nine students in kindergarten through grade 12 attended a private school.[3]

---

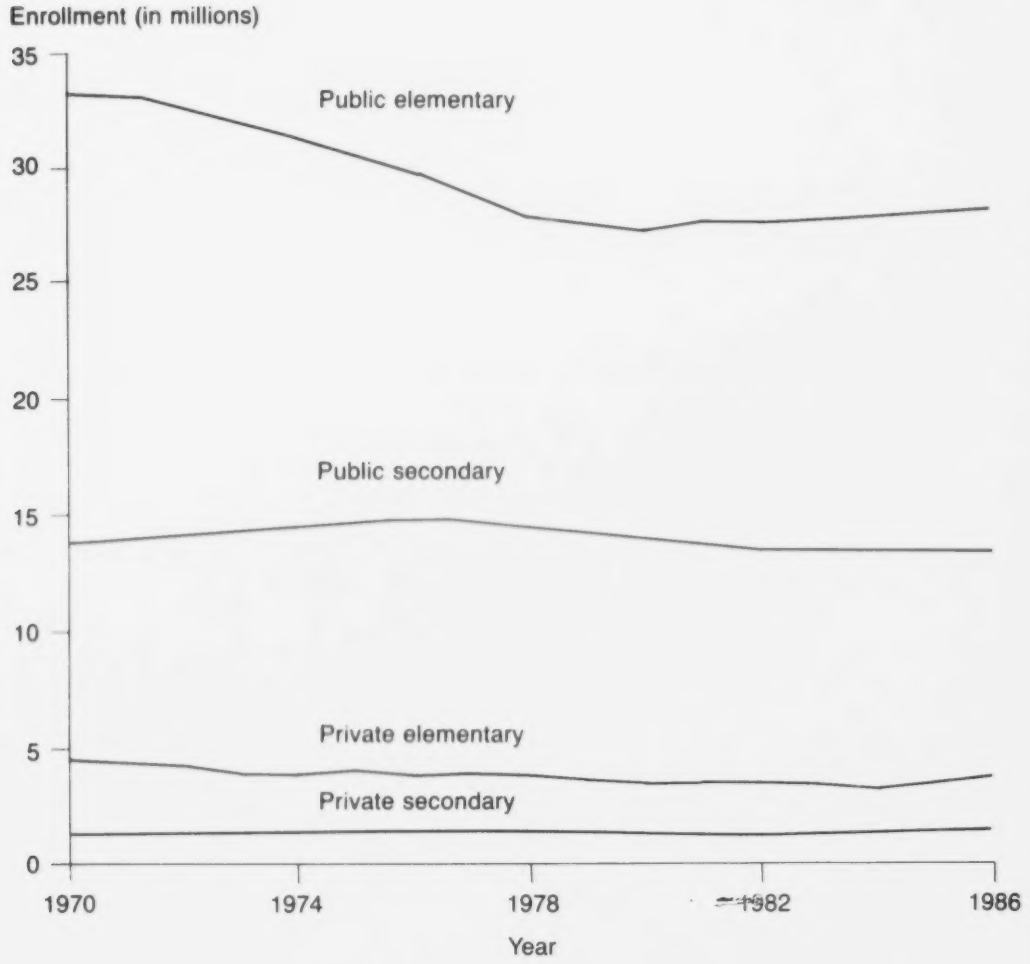
[1] See Indicator 1:17 for a discussion of projected public school enrollment to 1997. Projected enrollments are not available for private schools.

[2] An unexplained drop occurred in the number and proportion of private school students in 1984, according to the Bureau of the Census. However, the 1984 data appear to be an anomaly, since the 1985 and 1986 figures are consistent with the trend for 1979 to 1983.

[3] There are two major sources of national data on private school enrollment: the annual School Enrollment Supplement to the October Current Population Survey (CPS) and intermittent Private School Surveys conducted by the National Center for Education Statistics. The two sources sometimes produce differing estimates of the total number and proportion of private school students. For example, the 1985 Private School Survey reported that 12.3 percent of K-12 students were enrolled in private schools; CPS estimated 10.9 percent. CPS data were used in this indicator because they are the only available data consistent over time. For further discussion of data sources on private school enrollment, see U.S. Department of Education, *The Condition of Education, 1986 Edition*, pp. 186–201.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "School Enrollment—Social and Economic Characteristics of Students: October 1984 (Advance Report)" and "October 1985 (Advance Report)," *Current Population Reports*, Series P-20, Nos. 404 and 409; and personal communication.

Chart 1:16. – Trends in public and private school enrollment, by grade level: 1970–1986



SOURCE: Bureau of the Census, *Current Population Reports*, and personal communication with the author.

C. Context: Student Characteristics

Indicator 1:17 Trends in public school enrollment: 1969 to 1997

- **Total public elementary/secondary school enrollment declined during most of the 1970s and early 1980s.**
- **Enrollment in public elementary schools began to increase in 1985 and is projected to continue rising through 1996.**
- **The number of public secondary school students is expected to continue falling and then begin increasing in 1991.**

The number of students enrolled in schools affects the demand for teachers, facilities, and other educational resources. Enrollment varies at different grade levels and in different localities. State and local education officials must weigh enrollment patterns when deciding how to allocate their often limited resources.

Total public elementary and secondary enrollment declined steadily through most of the 1970s and into the early 1980s as the baby-boom generation grew older and moved through and out of the school system. Separately, the pattern for elementary and secondary enrollment[1] differed somewhat from the total enrollment trend. The number of elementary school students reached a record high in 1969, while secondary school enrollments peaked in 1976.

In part because the children born during the baby boom years of 1946 to 1964[2] tended to delay marriage and childbearing, their offspring did not begin to produce a rise in public school enrollment figures until 1985. This baby boomlet is expected to continue swelling the number of elementary school students through 1996 (though the numbers will not return to record levels). Secondary school enrollments are expected to continue falling until 1990, when the large numbers of elementary school students moving on to high school will raise secondary school enrollments.

State-by-State trends in elementary and secondary enrollment, it should be noted, present an extremely varied picture.[3]

---

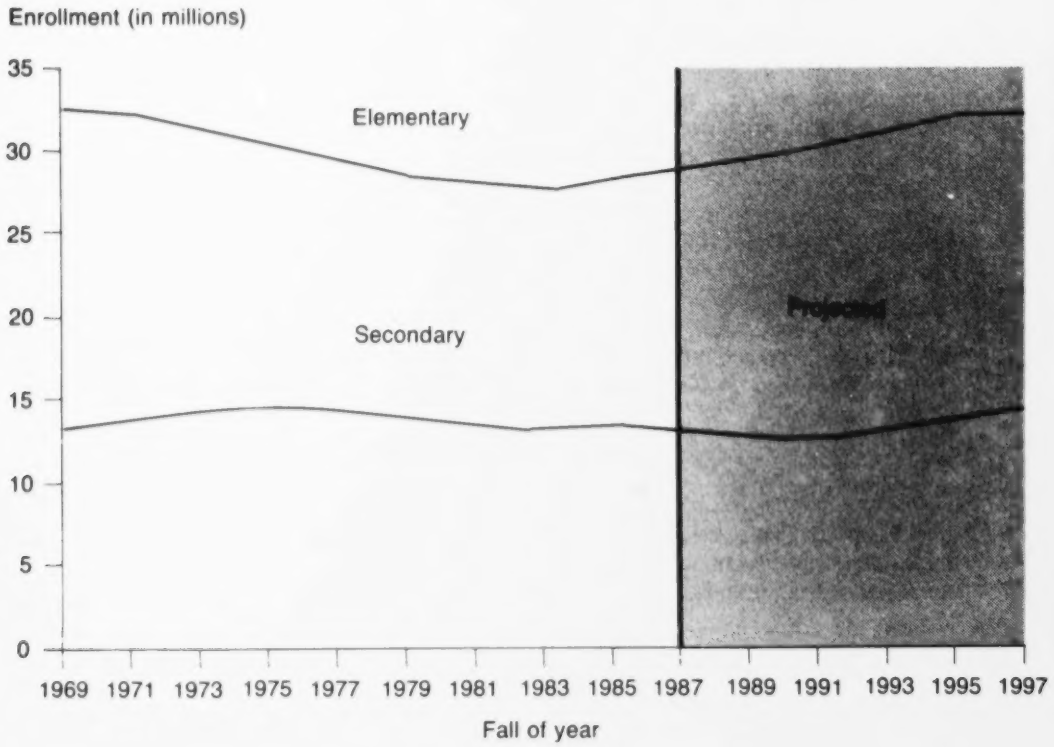
[1] Elementary school enrollment includes most kindergarten and some prekindergarten school enrollment, as well as grades 1 through 8. Secondary school enrollment includes grades 9 through 12.

[2] Leon F. Bouvier, "America's Baby Boom Generation: The Fateful Bulge," *Population Bulletin*, April 1980.

[3] For changes in State public school enrollment from 1975 to 1985, see U.S. Department of Education, National Center for Education Statistics, *Statistical Trends: State Facts 1975 to 1985.*

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1997–98*, forthcoming.

Chart 1:17.–Trends in public school enrollment: Fall 1969–1997



SOURCE: National Center for Education Statistics, *Projections of Education Statistics to 1997–98*, forthcoming.

C. Context: Student Characteristics

Indicator 1:18 Special education enrollment in federally supported programs

- **The total number of special education students rose between 1978–79 and 1986–87 from 3.9 to 4.4 million, due primarily to the growth in the number of students classified as learning disabled, which exceeded the growth of all the other groups combined.**
- **As a percent of the total public school enrollment, the number of special education students rose from 9.14 percent in 1978–79 to 10.97 percent in 1986–87, but has changed little in the last 4 years.**

The Education of the Handicapped Act, enacted by Congress in 1975, ensures the availability of a "free and appropriate public education" to all children with handicapping conditions.[1] Examining changes in the number and distribution of such students helps educators and policymakers assess the efforts to comply with this mandate and forecast the need to generate more resources.

Since this law was implemented on September 1, 1978, the number of children enrolled in federally supported special education programs has risen each year.[1,2] The increases were primarily due to growing numbers of learning disabled children.[3]

In addition to 52,000 new students in the learning disabled category in 1986–87, the number of students who were identified as speech impaired, seriously emotionally disturbed, or multihandicapped also rose by several thousand. The number of children identified as mentally retarded decreased, continuing a 10-year trend. The number of students classified as having other handicapping conditions remained relatively stable or decreased by small amounts.

---

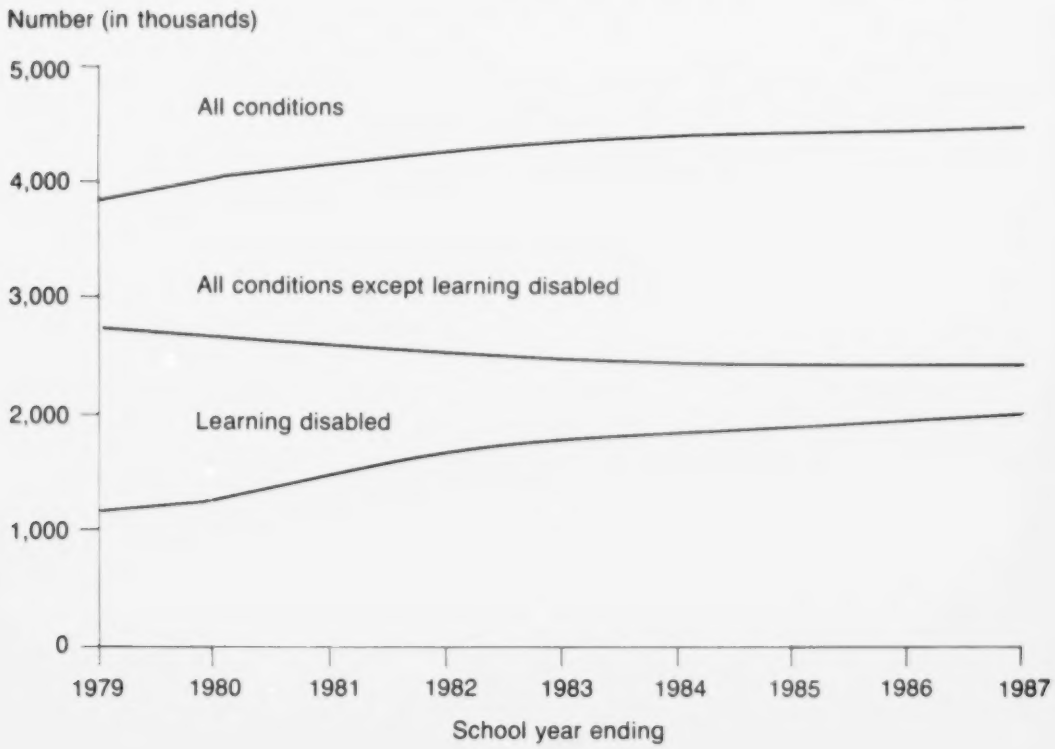
[1] The total count of children in special education programs includes children served under Part B of the Education of the Handicapped Act (EHA-B) and Chapter 1 of the Education Consolidation and Improvement Act in State-Operated Programs (ECIA-SOP).

[2] The figures reflected in this indicator are based on reports from the 50 States and the District of Columbia only (i.e., figures from U.S. territories are not included).

[3] Guidance to the States to address widespread problems of inconsistent identification, classification, and placement procedures used with students with learning disabilities is forthcoming.

SOURCE: U.S. Department of Education, Office of Special Education and Rehabilitative Services, *Annual Report to Congress on the Implementation of the Education of the Handicapped Act*, various years; and unpublished data.

Chart 1:18.–Trends in the number of handicapped students served in federally supported education programs: School years ending 1979–1987



SOURCE: National Center for Education Statistics, Common Core of Data survey. Office of Special Education and Rehabilitative Services, *Ninth Annual Report to Congress on the Implementation of the Education of the Handicapped Act, 1987*; and unpublished data.

Indicator 1:19 Disruptive behavior in the public schools

- **About 44 percent of teachers surveyed in 1987 said that disruptive student behavior had increased in the last 5 years.**
- **In the teachers' view, school discipline policies have improved significantly since 1980; still, half reported that policies were not consistently applied.**

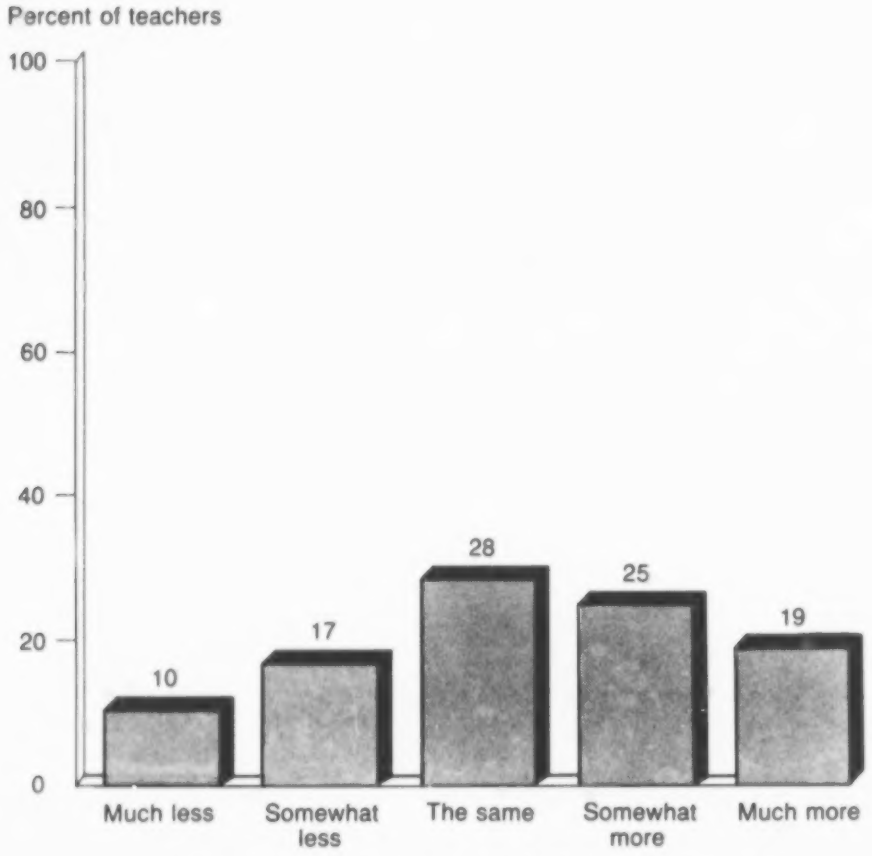
Research on effective schools has identified a safe, orderly environment as a prerequisite to promoting student academic success. Educators and others are therefore interested in examining indices of student discipline and classroom environment.

In assessing the incidence of student disruptive behavior in 1987, 19 percent of public school teachers felt there was "much more" disruptive behavior in their schools than 5 years before; another 25 percent indicated there was "somewhat more" now. Indeed, almost one-third of the teachers surveyed stated they had seriously considered leaving teaching because of student misbehavior.

To obtain trend information on public school teachers' assessment of student discipline, findings from this survey were compared with polls conducted earlier in the 1980s by the National Education Association (NEA). Teachers in the 1987 survey were considerably more positive about the discipline policies of their schools than their NEA counterparts in 1980. So while teachers report an increase in disruptive behavior, perhaps they are finding it interferes less with their teaching because more mechanisms exist for dealing with it. The table below shows various positive characteristics of school discipline policy and the percent of teachers who said these characteristics described their school.

	School discipline policy characteristic				
Year	In writing	Strict enough	Comprehensive enough	Clear	Consistently applied
	Percent				
1980	69	39	42	60	33
1987	93	66	72	80	50
	Rise, in percentage points				
1980 to 1987	24	27	30	20	17

Chart 1:19.—Changes in student disruptive behavior as reported by teachers: School year ending 1987



SOURCE: Center for Education Statistics, "Public School Teacher Perspectives on School Discipline," *OERI Bulletin*, 1987.

TEXT NOTE: Some caution is needed in interpreting comparisons of U.S. Department of Education survey figures and those of the NEA Teacher Polls, as the differences may be due in part to methodological variations between the studies.

TEXT SOURCE: U.S. Department of Education, Center for Education Statistics, "Public School Teacher Perspectives on School Discipline," *OERI Bulletin*, 1987.

C. Context: Learning Environment

Indicator 1:20 Student drug and alcohol abuse

- **Cocaine use among high school seniors dropped significantly in 1987, the first such decline since 1975.**
- **While alcohol use has generally declined since 1979, rates remain high. In 1987, about two of every three seniors reported using alcohol in the month preceding the survey.**

Learning is a thinking process, and drugs interfere with thinking and reduce academic achievement. Neighborhoods near schools often are magnets for drug dealers, who can be students themselves. Crimes of violence may accompany or result from substance abuse. In these circumstances, school effectiveness and student achievement, not limited only to the abusers, can suffer. Nationally, millions of dollars are spent to combat drug abuse and related crimes and to rehabilitate individuals who have become chemically dependent.

Drug and alcohol abuse, despite its health- and life-threatening consequences, is widespread among American students. Acquaintance with such substances—whether sedatives, hallucinogens or stimulants—generally begins in adolescence and, increasingly, at even younger ages. While alcohol and illegal drug use has declined in the 1980s, it remains widespread. For example, by the time they are high school seniors, nearly 6 out of 10 students have tried an illicit substance.

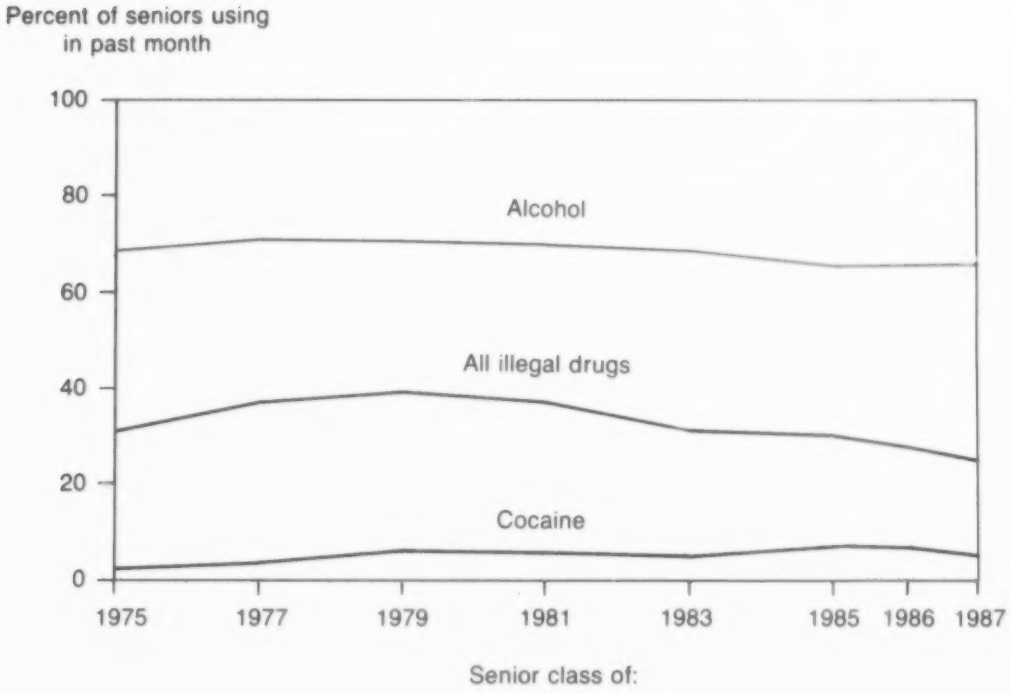
The rise in cocaine use among students has been particularly dramatic in the last decade or so. In just 4 years, from the class of 1975 to the class of 1979, the proportion of students who reported using cocaine in the past year doubled, going from almost 6 percent to 12 percent. Annual cocaine use peaked in 1985 at 13 percent. By 1987, the proportion had dropped to slightly more than 10 percent. Similarly, the number of high school seniors who reported using cocaine in the previous 30 days declined from almost 7 percent in 1985 to just over 4 percent. There is evidence, however, that the inexpensive and highly addictive form of cocaine called "crack" has not followed the general decline in cocaine usage, especially in urban areas and among high school dropouts.*

---

*"Young Adults Show Drop in Cocaine Use," *The New York Times*, January 14, 1988.

SOURCE: U.S. Department of Health and Human Services, Alcohol, Drug Abuse and Mental Health Administration, National Institute on Drug Abuse, *Drug Use Among American High School Students, College Students, and Other Young Adults*, 1986; and personal communication with the author. See also U.S. Department of Education, *Schools Without Drugs*, 1986.

Chart 1:20.—Trends in the use of drugs and alcohol by high school seniors: Selected years, 1975–1987



SOURCE: National Institute on Drug Abuse, *Drug Use Among American High School Students, College Students, and Other Young Adults*, 1986; and personal communication with the author.

C. Context: Learning Environment

Indicator 1:21 School climate and reading performance

- **Students enrolled in schools with numerous problems have lower reading scores than students in schools where factors such as absenteeism, lack of parent interest, and discipline problems are not as prevalent.**
- **High school principals considered problems in their schools to be more serious than elementary school principals, especially in the areas of absenteeism, teacher motivation, low standards for students, and vandalism.**
- **Principals' average ratings of school problems indicate that private schools have fewer problems than public schools, particularly at the high school level.**

A positive school climate encourages learning. Principals, teachers, parents, and students work together to reinforce the importance of achievement. Educators can contribute to an effective learning environment by emphasizing priorities, such as basic skills and academic success, high expectations for all students, a safe and orderly atmosphere, and parental involvement.[1]

Principals were asked to rate eight potential problems[2] in their schools. Students where these factors were rated as "minor" or "moderate" had lower reading scores than students in schools where they were not considered problems. The difference was significant after taking into account student background characteristics such as race/ethnicity, parental education, and reading materials in the home.

High school principals rated their school problems as more serious than did elementary school principals. Lack of parent interest and lack of discipline were identified as minor or moderate problems in two-thirds of all schools. In 1 out of 10 high schools, student absenteeism and lack of parent interest were rated as "serious."

Principals' average rating indicates that private schools experience fewer problems than public schools, particularly at the high school level.

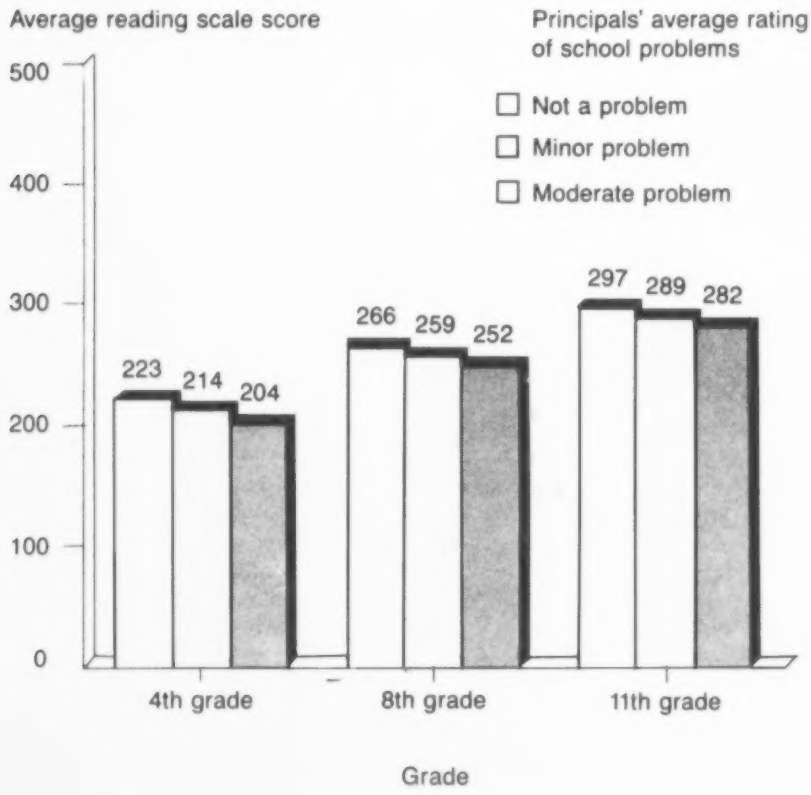
---

[1] U.S. Department of Education, Office of Research, *Reaching for Excellence: An Effective Schools Sourcebook*, 1985. See also S. C. Purkey and M. S. Smith, "Effective Schools: A Review," *The Elementary School Journal*, vol. 83 (4) (March 1983): 427–452.

[2] The eight potential school problems were student absenteeism, lack of parent interest, lack of discipline, lack of teacher commitment/motivation, teacher absenteeism, teacher turnover, low standards for students, and vandalism. The average rating on school problems is the average rating of the eight potential problems within each school. No schools had an average of "serious."

SOURCE: U.S. Department of Education, National Center for Education Statistics, "School Problems and Reading Performance," *Survey Report*, forthcoming.

Chart 1:21.—Average adjusted reading proficiency, by average rating on school problems and grade: 1984



NOTE: Reading proficiency scale scores were adjusted for race/ethnicity, language spoken in the home, parental education, and number of reading aids in the home.

SOURCE: National Center for Education Statistics, "Schools Problems and Reading Performance," *Survey Report,* forthcoming.

C. Context: Perceptions

Indicator 1:22 Perceptions of student problems and education improvement strategies

- **Teachers feel that a major reason students have difficulties in school is because they "are left on their own after school."**
- **Parents, more than teachers, feel that school-initiated policies can improve education.**

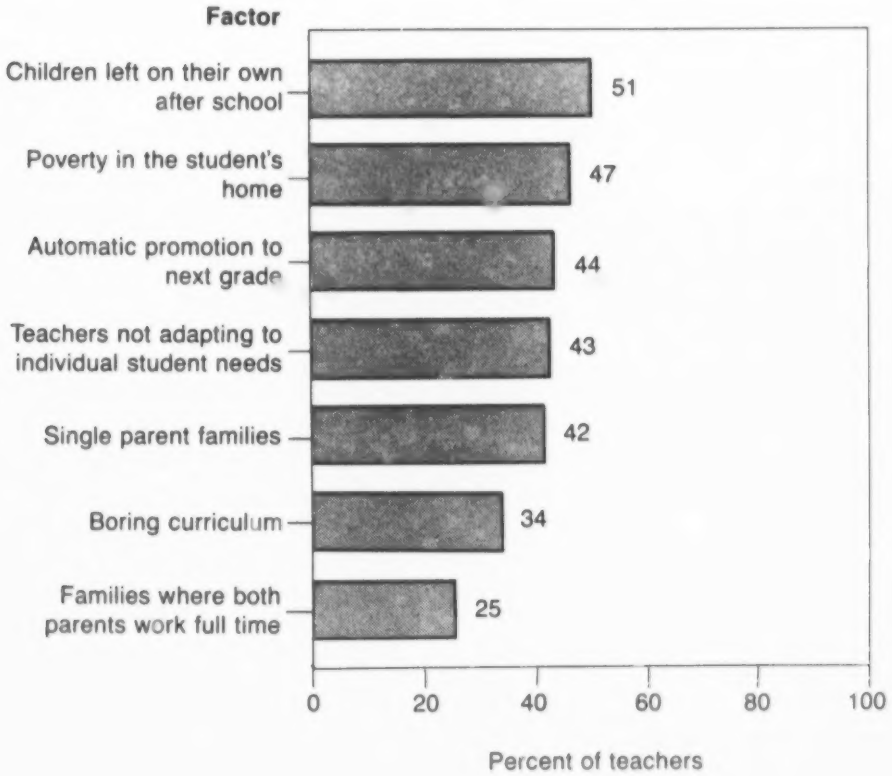
Research has shown that students with behavioral and academic problems could be potential school dropouts. In a 1987 survey, teachers clearly viewed the phenomenon of "latch-key" children as a major problem. Half of the teachers surveyed felt that "children who are left on their own after school" was a major cause of school difficulties. Poverty in the student's home was the second most frequently cited cause. It was the most frequent cause cited among teachers in districts of below-average wealth.

In order to further explore the factors associated with student problems, parents and teachers were both asked to rate the extent to which they felt each of seven criticisms of parents was valid. About 60 percent of both teachers and parents surveyed felt that "many" or "most" parents "leave their children alone too much on their own after school." While 17 percent of parents of public school children surveyed acknowledged that their children are alone after school 1 or 2 days per week, 24 percent said that their child is left alone almost every day. Parents of black students and of junior high and high school students are the most likely to say that their children are on their own almost every day after school. But this problem is evident across diverse geographical locations, as well as parental income and education levels.

Most solutions to a student's school problems require cooperation between parents and teachers, whether those solutions are school-initiated or home-based. However, on the extent to which they felt the reform would "help a lot" to improve education, parents and teachers surveyed differed on six of seven possible strategies. Of these six, the four that were school-initiated (such as "having the school notify the parents immediately about any problem involving their child") were favored by parents more than teachers. But teachers overwhelmingly supported one home-based strategy ("having parents spend more time with their children in support of school and teachers"). The sixth strategy ("getting teachers and parents to meet together and talk about school policies") involved both home and school.

SOURCE: *The Metropolitan Life Survey of The American Teacher 1987: Strengthening Links Between Home and School.*

Chart 1:22.—Percent of teachers who think that each factor is a "major cause" of students' difficulties in school: 1987



SOURCE: *The Metropolitan Life Survey of the American Teacher 1987: Strengthening Links Between Home and School.*

C. Context: Perceptions

Indicator 1:23 Public opinion of public schools and other national institutions

- **The public has consistently rated their own local public schools higher than it has rated the Nation's schools.**
- **In 1987, the local public schools were rated higher by public school parents than by nonpublic school parents.**
- **The public's rising "confidence" in schools, beginning in the mid-1980s, follows more than a decade of declining confidence in them and in many other national institutions.**

The public schools depend upon public support in a number of ways. Polls of the public's perception of the schools are good gauges of the strength of that support. The annual *Gallup Poll of the Public's Attitudes Toward the Public Schools* provides data on the public's ratings of the schools. This poll has become a kind of national barometer, closely watched and debated each year by educators and policymakers. For example, the National Commission on Excellence in Education cited findings from the Gallup Poll in its 1983 report, *A Nation at Risk*.

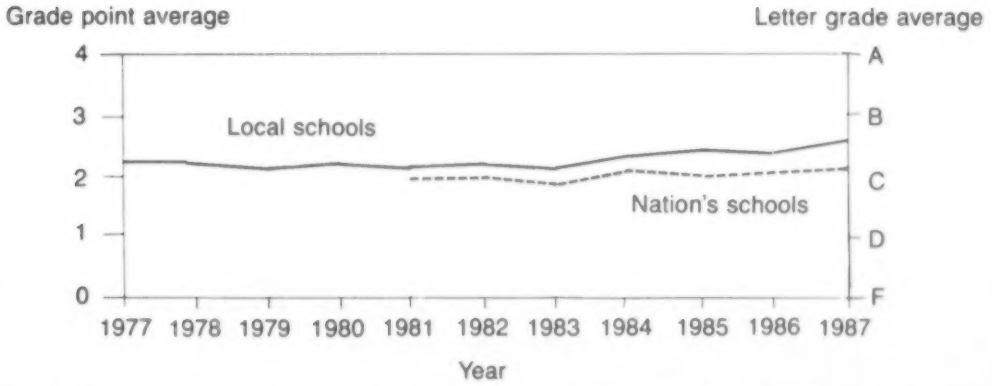
The most recent poll shows that in 1987, the public continued to grade their local schools higher than the Nation's schools as a whole. Local public schools earned a grade point average of 2.44 or C+ in 1987, while the Nation's public schools earned a 2.18 or C. Although unexceptional, these average grades are the highest received since the Gallup organization began asking the public to grade the schools in 1977. In 1983, the public had given both local schools and the Nation's schools their lowest grades (C and C–, respectively).

In recent years, the Gallup organization has distinguished between ratings by public school parents and by nonpublic school parents. In 1987, public school parents gave the local public schools an average grade of almost B–, whereas nonpublic school parents gave the local public schools an average grade of only C.

As another Gallup poll shows, the public's earlier failing confidence was not limited to schools; it had also spread among other national institutions. For many of these, support reached its low point in the early 1980s. But by 1985, the public appeared to be regaining confidence in some institutions, including schools.

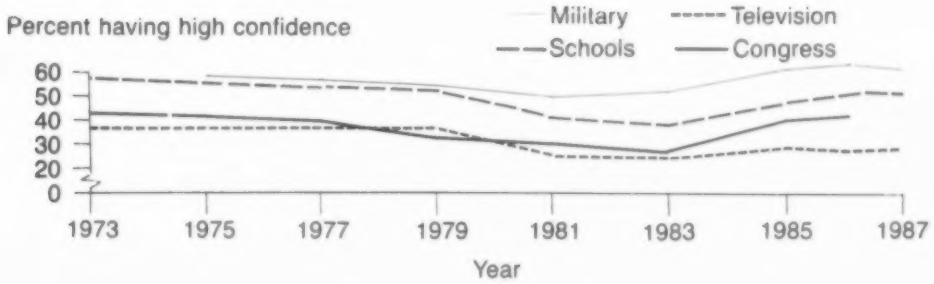
SOURCES: George H. Gallup, "The 19th Annual Gallup Survey of the Public's Attitudes Toward the Public Schools," *Phi Delta Kappan*, September 1987; and The Gallup Poll, August 16, 1987.

Chart 1:23A.–Trends in the public's ratings of public schools: 1977–1987



SOURCE: The 19th Annual Gallup Poll of the Public's Attitudes Toward the Public Schools, *Phi Delta Kappan*.

Chart 1:23B.–Trends in the public's confidence in selected national institutions: Selected years, 1973–1987



SOURCE: The Gallup Poll, August 16, 1987.

C. Context: Requirements

Indicator 1:24 Graduation requirements in public and private high schools

- **Since 1981, public school districts have increased the number of course hours they require a student to take before graduating from high school.**
- **Both public and private schools approximated the graduation requirements for English and social studies recommended by the National Commission on Excellence in Education.**
- **In mathematics and science, graduation requirements for public schools were considerably lower than either private school requirements or the recommendations of the Commission.**

Graduation requirements are a measure of the magnitude and direction of academic rigor in the curriculum. They indicate the policy intent of States and local school districts for public schools, and of governing bodies for private schools. Individual students may, and often do, elect a program of studies that exceeds the requirements. In 1983, the National Commission on Excellence in Education drew attention to this measure of school performance by recommending a minimum of 4 years of English and 3 years each of mathematics, science, and social studies.

In the mid-1980s, both public and private schools approximated the Commission's recommendations in English.[1] Public schools almost met, while private schools surpassed, Commission recommendations for social studies. The two sectors were less comparable in their mathematics and science requirements, however. While public school districts had increased their graduation requirements, they still required much less mathematics and science than the Commission recommended, and required about 1 year less than private schools. The districts expected to increase their requirements further by 1987–88.

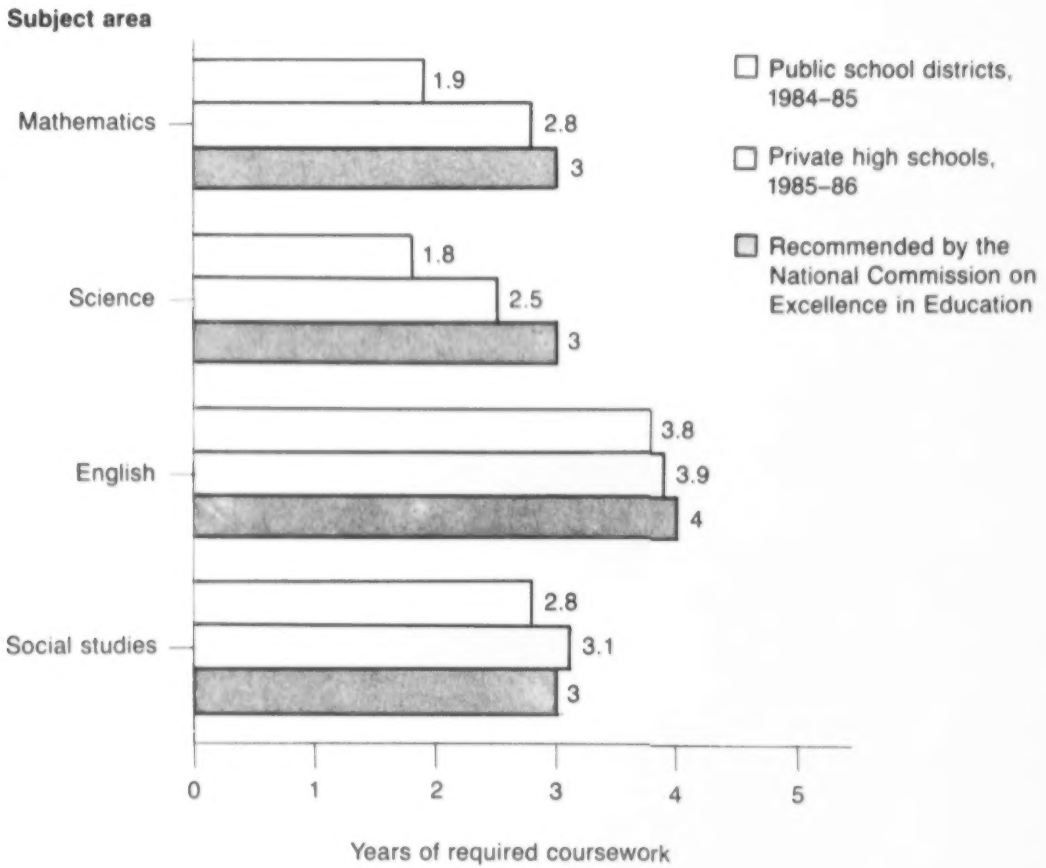
Public school data reflect both State and local requirements. The 1980s saw a surge both in the number of States establishing requirements and in the number of courses these states required for graduation. By 1986, the District of Columbia and 49 States (all except Colorado) had established a minimum number of units required for high school graduation. Of these, 39 States and the District of Columbia increased the number of units required for graduation.[2]

---

[1] The most recent data available are 1985–86 for private schools and 1984–85 for public schools.

[2] For a major statement on State and local roles in the next stage of education reform, see National Governors' Association, *Time for Results: The Governors' 1991 Report on Education*, Washington, D.C., August 1986, and *Results in Education: 1991*, Washington, D.C., 1986.

Chart 1:24.—Average years of classwork required for high school graduation



SOURCE: Center for Education Statistics, 1985–86 Private School Survey and 1985 Public School Survey.

TEXT SOURCES: U.S. Department of Education, Center for Education Statistics, "Public High School Graduation Requirements," *OERI Bulletin*, 1986; *Private Schools and Private School Teachers: Final Report of the 1985–86* Private School Study, 1987; and unpublished tabulations.

Indicator 1:25 Availability of advanced math and science courses in high school

- **In 1985–86, nearly all public and private high schools offered biology but relatively few offered calculus.**
- **Small schools were less likely to offer chemistry, physics or calculus than medium or large schools.**
- **Suburban and urban schools were more likely than rural schools to offer calculus; suburban schools were also more likely to offer physics than were rural schools.**

Research has shown that the more time spent learning a subject and the more advanced the subject taken, the higher a student's achievement in that subject (see *Indicator 1:6*).[1] At a time when science and technology are playing an increasingly important role in the world economy, policymakers, educators, and parents are interested in the extent to which advanced mathematics and science courses are offered in high school. Students who lack the opportunity to learn are one result of teacher shortages in mathematics and science (see *Indicator 1:15*). This situation has implications for broad policy issues such as the use of alternative certification routes and incentives for recruiting quality mathematics and science teachers (see *Indicator 1:26*).

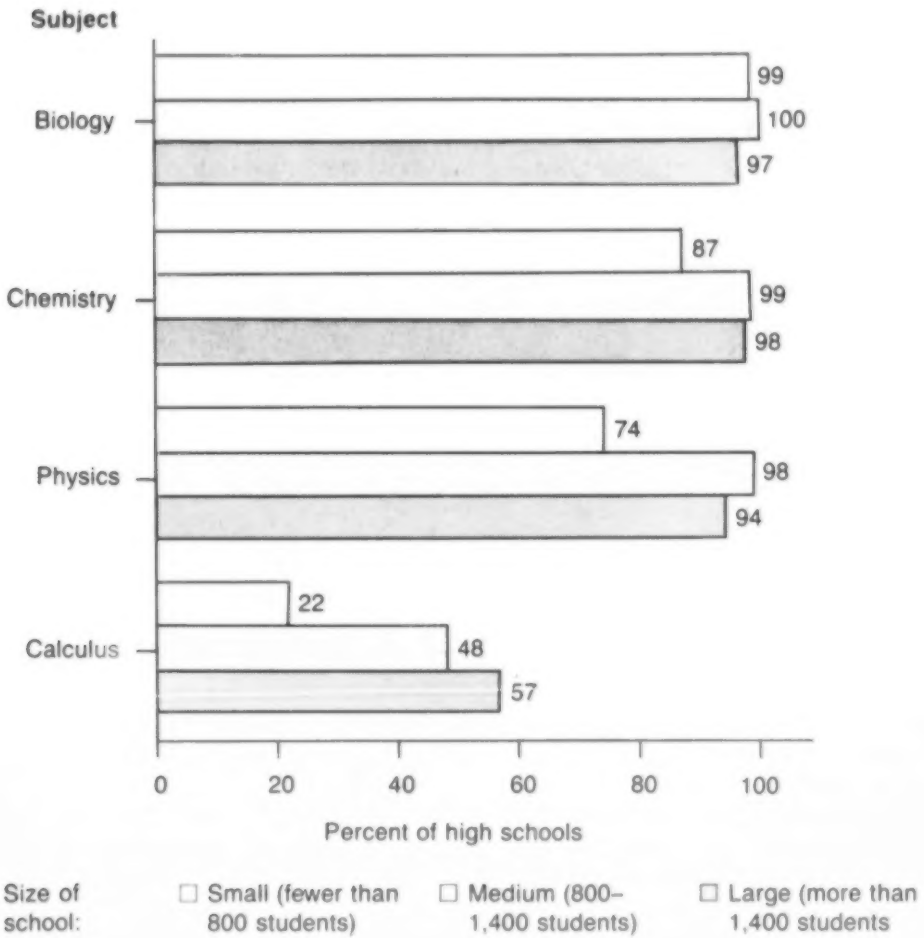
In school year 1985–86, 99 percent of all public and private high schools[2] offered biology; about 90 percent offered chemistry; about 80 percent offered physics; and only about 30 percent offered calculus. These percentages varied, however, for schools of different sizes or in different types of communities. Nearly all high schools offered biology, regardless of the size of the school. Chemistry, physics, and calculus, on the other hand, were less likely to be offered by small schools than by medium or large schools. Only one out of five small schools offered calculus, versus about half of medium and large schools. Schools in different types of communities show similar patterns of course availability. Although no difference emerged in the percentage of rural, urban, and suburban schools offering biology, urban and suburban schools were more likely to offer calculus. Small, rural schools were especially unlikely to make calculus available.

---

[1] See also L. V. Jones, "White–Black Achievement Differences, *American Psychologist*, vol. 39, no. 11 (November 1984), and W. R. Borg, "Time and School Learning," *Time to Learn*. (Washington D.C.: U.S. Department of Education, May 1980)

[2] High school is defined as any school containing at least one of grades 10 through 12.

Chart 1:25.—Percent of high schools offering selected courses, by size of school: School year ending 1986



SOURCE: National Science Foundation, National Survey of Science and Mathematics Education, 1985–86.

TEXT SOURCE: Iris R. Weiss, *Report of the 1985–86 National Survey of Science and Mathematics Education,* Research Triangle Institute, 1987; and personal communication with the author.

C. Context: Requirements

Indicator 1:26 Competency testing for teacher certification

- **By fall of 1987, 45 States had enacted competency testing programs as part of the process of initially certifying teachers.**
- **In 31 States, regulations had also required that students take an examination in order to be admitted to a teacher education program.**

The States have taken the lead in the current educational reform movement and have been particularly active in seeking ways to improve the quality of teachers in elementary and secondary schools. To screen new teacher candidates, most States use competency testing, which had its beginnings among Southern States in the mid- to late 1970s. With these tests, States hope to exclude teaching candidates deficient in basic skills and knowledge.

One subject of debate concerns what competency tests should cover. No nationally accepted test exists, so some States use commercially developed tests, and some use tests of their own design. All tests cover basic skills, subject matter, pedagogy (i.e., teaching methods), or a combination.

While no one agrees which test or type of test is most suitable for competency testing, the concept of testing is generally viewed positively by the major teachers' unions and by teachers themselves.[1] The Carnegie Forum on Education and the Economy recently proposed a three-stage voluntary assessment process covering subject matter, education courses, and teaching performance, all under the aegis of a National Board for Professional Teaching Standards.[2]

Many States, perceiving a drop in the number and quality of graduates from teacher education programs, have created alternative routes to certification. The vast majority of teachers, however, will continue to come from traditional postsecondary schools of education. But one striking phenomenon that has become more prevalent in the 1980s is State requirements a student must meet just to be *admitted* to teacher training programs. Thirty-one States required or were developing a competency test for admission to undergraduate or 5-year teacher education programs as of June 1987.

---

[1] Metropolitan Life Insurance Company and Louis Harris and Associates, *The American Teacher, 1986* (New York City: 1986).

[2] Carnegie Forum on Education and the Economy, *A Nation Prepared*, 1986.

SOURCES: Council of Chief State School Officers, *Education in the States, Volume 1*, 1987. Education Commission of the States; personal communication with the author. See also U.S. Department of Education, Office of Research, *What's Happening in Teacher Testing—1987*, August 1987.

Chart 1:26.—States that have enacted testing programs for initially certifying teachers: Fall 1987

SOURCE: Office of Research, *What's Happening in Teacher Testing—1987*, Education Commission of the States, personal communication with the author.

Table 1:1-1.—Average reading proficiency for students in grades 3, 7, and 11, by selected characteristics: 1986

Characteristic	Average reading proficiency*		
	Grade 3	Grade 7	Grade 11
Total	38.1	48.9	56.1
Race/ethnicity			
White	39.8	50.3	57.3
Black	33.4	45.2	51.5
Hispanic	33.2	44.4	51.3
Region			
Northeast	39.1	50.7	57.4
Southeast	37.2	48.1	54.8
Central	39.3	49.0	56.5
West	36.9	48.0	55.4
Type of community			
Disadvantaged urban	31.9	43.8	51.2
Advantaged urban	41.2	51.6	59.5
Sex			
Male	37.3	47.5	54.5
Female	38.9	50.3	57.7

*The range of the reading proficiency scale is 0 to 100.

SOURCE: National Assessment of Educational Progress, *Who Reads Best? Factors Related to Reading Achievement in Grades 3, 7, and 11*, 1988.

Table 1:1-2.—Percent of students at each level of written response to reading tasks, by grade: 1986

Task	Grade 3	Grade 7	Grade 11
		Percent	
Task one (story)			
Inadequate	70.0	36.7	20.8
Minimal	10.7	17.7	15.6
Satisfactory	18.5	38.1	41.3
Elaborated	.8	7.5	22.3
Task two (social studies)			
No comparison	69.6	36.2	25.6
Unsatisfactory comparison	29.9	60.4	62.9
Minimal comparison	.5	3.2	9.0
Satisfactory comparison	0	.2	1.6
Elaborated comparison	0	0	.9
Task three (story)			
Inadequate	—	16.6	5.8
Minimal	—	18.8	16.4
Satisfactory	—	50.4	58.1
Elaborated	—	14.3	19.7

— Not applicable.

SOURCE: National Assessment of Educational Progress, *Who Reads Best? Factors Related to Reading Achievement in Grades 3, 7, and 11*, 1988.

Table 1:2-1.—Average mathematics proficiency scale scores for 9-, 13-, and 17-year-old students: Selected years, 1973-1986

Age	1973*	1978	1982	1986
9	221.5	222.5	222.8	225.4
13	259.6	258.0	262.3	262.6
17	306.7	286.4	284.2	288.2

*The 1973 mathematics assessment was not included in the scaling of NAEP trend data. However, a rough estimate of the 1973 mean level of student math proficiency was computed by NAEP.

SOURCE: National Assessment of Educational Progress, *The Mathematics Report Card: Are We Measuring Up?*, 1988.

Indicator 1:2

Table 1:2-2.—Percent of 9-, 13-, and 17-year-old students at or above the five proficiency levels on the mathematics proficiency scale: 1978, 1982, and 1986

Proficiency levels	Age	1978	1982	1986
		Percent		
150	9	97.8	98.2	98.6
Simple arithmetic facts	13	99.8	99.9	100.0
	17	100.0	100.0	100.0
200	9	74.3	75.9	78.1
Beginning skills and	13	93.6	97.1	98.1
understanding	17	98.5	99.1	99.6
250	9	21.9	21.1	23.6
Basic operations and	13	59.6	65.9	66.7
problem solving	17	81.3	81.5	87.2
300	9	.8	.6	.6
Moderately complex	13	12.9	11.5	10.4
procedures and reasoning	17	38.3	34.4	35.5
350	9	.0	.0	.0
Multistep problem	13	.3	.2	.1
solving and algebra	17	4.8	3.4	4.3

SOURCE: National Assessment of Educational Progress, *The Mathematics Report Card: Are We Measuring Up?*, 1988.

Indicator 1:3

Table 1:3-1.—U.S. history item responses: 1986

More than 80 percent answered correctly:	Percent correct	Less than 30 percent answered correctly:	Percent correct
Thomas Edison invented the light bulb	95.2	Andrew Jackson was President between 1820–1840	29.9
Location of the Soviet Union on a map	92.1	The Reformation led to the establishment of Protestant groups	29.8
Alexander Graham Bell invented the telephone	91.1	The United Nations was founded between 1934–1947	25.9
George Washington was President between 1780–1800	87.9	The Seneca Falls Declaration was concerned with women's rights	25.8
Location of Italy on a map	87.7	Abraham Lincoln was President between 1860–1880	24.7
The Underground Railroad was a network for helping slaves escape	87.5	Medicare and the Voting Act were passed under Lyndon Johnson's Great Society	23.9
Adolf Hitler was the leader of Germany when the U.S. entered World War II	87.4	Betty Friedan and Gloria Steinem: leaders in the women's movement	22.8
Thomas Jefferson was the primary author of the Declaration of Independence	87.4	Progressive movement refers to the period after World War I	22.6
The assembly line was introduced in the U.S. automobile industry	87.2	Reconstruction refers to the readmission of the Confederate States	21.4
Locate on a map the area representing the 13 original States	84.8	John Winthrop and the Puritans founded a colony at Boston	19.5
The Ku Klux Klan used violence to oppose equality for minorities	83.9		
Harriet Tubman was a leader in helping slaves escape to the North	83.8		
Bill of Rights guarantees freedom of speech and religion	81.3		
Location of the Rocky Mountains on a map	81.3		
The Japanese attack on Pearl Harbor led the U.S. into World War II	80.0		

SOURCE: National Assessment of Educational Progress, *Literature and U.S. History: The Instructional Experience and Factual Knowledge of High School Juniors*, 1987.

Indicator 1:3

Table 1:3-2.—Literature item responses: 1986

More than 80 percent answered correctly:	Percent correct
Noah gathered pairs of creatures onto the Ark	94.0
Moses led the people out of Egypt and gave the 10 Commandments	92.3
Romeo and Juliet's love was hindered by their feuding families	89.7
"I have a dream . . ." from a speech by Martin Luther King, Jr.	88.1
Hamlet said, "To be or not to be: that is the question."	87.8
In "A Christmas Carol," Ebenezer Scrooge became generous	87.2
Zeus was the ruler of the gods in Greek mythology	86.7
The White Rabbit and Mad Hatter are characters in *Alice in Wonderland*	86.1
Robin Hood was known for stealing from the rich to give to the poor	85.7
Cinderella's rags turned into a gown and she met a prince	85.1
"The Lord is my shepherd . . ." is from Psalm 23	82.4
Huckleberry Finn is about an orphaned boy and a runaway slave	80.5
Merlin was the magician in the legend of King Arthur	80.5

Less than 30 percent answered correctly:	Percent correct
D.H. Lawrence wrote "The Rocking Horse Winner," *Sons and Lovers*	28.7
Willa Cather wrote *My Antonia*, *Death Comes for the Archbishop*	28.2
Tennessee Williams wrote *A Streetcar Named Desire*	27.6
Ernest Hemingway wrote "In Another Country," "The Killers"	27.3
Thomas Hardy wrote *Return of the Native*	24.4
In *Catcher in the Rye*, a 16-year-old boy goes to New York	22.5
Henry James wrote about American compared to European lives	21.9
Henrik Ibsen wrote *Hedda Gabler*, *A Doll's House*	20.3
Joseph Conrad wrote *Heart of Darkness*	19.3
Invisible Man describes a young man's move to Harlem	18.3
Fyodor Dostoevski wrote *Crime and Punishment*	17.1
James Joyce is the author of *Ulysses* and *A Portrait of the Artist as a Young Man*	15.6
De Tocqueville wrote about what he saw in *Democracy in America*	15.5
Eudora Welty and Flannery O'Connor are known for stories set in the American South	14.4
The animal referred to in William Blake's poem is a tiger	13.6
The Pilgrim's Progress is an allegory about Christians	13.4

SOURCE: National Assessment of Educational Progress, *Literature and U.S. History: The Instructional Experience and Factual Knowledge of High School Juniors*, 1987.

Table 1:3-3.—Average scores on the U.S. history and literature scales for high school juniors, by selected characteristics: 1986

Selected characteristics	Scale	
	History	Literature
	Average scores*	
Total	285.0	285.0
Race/ethnicity		
White	290.8	289.9
Black	263.1	267.5
Hispanic	262.5	264.8
Sex		
Male	290.7	282.8
Female	279.0	287.3
Region		
Northeast	293.8	293.0
Southeast	278.4	282.6
Central	286.8	284.3
West	280.2	280.4
Size/type of community		
Rural	275.1	273.7
Urban disadvantaged	262.0	265.2
Urban advantaged	301.1	301.4
School program		
Academic	298.8	298.7
General	271.4	271.7
Vocational/technical	266.3	265.9
Parents' level of education		
No high school diploma	260.8	266.2
Graduated high school	273.8	273.4
Post high school	289.7	288.3
Graduated college	297.7	297.6
Reading materials in the home		
0-3 types	265.1	265.4
4 types	279.6	279.3
5 types	291.6	291.7

*The history and literature scales range from 0 to 500.

SOURCE: National Assessment of Educational Progress, *Literature and U.S. History: The Instructional Experience and Factual Knowledge of High School Juniors*, 1987.

Table 1:4-1.—Overall computer competence scores for students in grades 3, 7, and 11: School year ending 1986

Grade tested	Number of items	Grade level		
		3	7	11
		Mean percent correct		
Grade 3	59	33.7	—	—
Grade 7	131	—	41.2	—
Grade 11	125	—	—	46.2
Grades 3 and 7	44	33.9	48.3	—
Grades 7 and 11	65	—	48.9	57.9
Grades 3, 7, 11	26	38.7	55.2	64.8

— Not applicable.

SOURCE: National Assessment of Educational Progress, *Computer Competence: The First National Assessment*, draft final report, November 1987.

Table 1:4-2.—Computer competence scores for students in grades 3, 7, and 11, by computer use, study or ownership: School year ending 1986

Type of experience	Grade level		
	3	7	11
	Mean percent correct		
Have used a computer			
Yes	34.6	42.2	47.6
No	30.8	34.0	37.4
Are currently studying computers			
Yes	34.8	44.1	52.8
No	32.6	39.5	45.1
Family owns computer			
Yes	36.4	46.1	52.7
No	32.5	38.9	43.5

NOTE: Scores do not have equivalent meanings across grade levels.

SOURCE: National Assessment of Educational Progress, *Computer Competence: The First National Assessment*, draft final report, November 1987.

Table 1:4-3.—Computer competence scores for students in grades 7 and 11, by home and school experience: School year ending 1986

Family ownership/ study status	Grade level	
	7	11
	Mean percent correct	
Owns, is studying	37.2	48.5
Owns, is not studying	35.5	44.2
Does not own, is studying	33.8	41.5
Does not own, is not studying	31.4	37.4

NOTE: Scores do not have equivalent meanings across grade levels.

SOURCE: National Assessment of Educational Progress, *Computer Competence: The First National Assessment*, draft final report, November 1987.

Table 1:5-1.—Scholastic Aptitude Test (SAT) scores: School years ending 1963–1987

Year*	Total	Verbal	Math	Year*	Total	Verbal	Math
	Average test scores				Average test scores		
1963	980	478	502	1975	906	434	472
1964	973	475	498	1976	903	431	472
1965	969	473	496	1977	899	429	470
1966	967	471	496	1978	897	429	468
1967	958	466	492	1979	894	427	467
1968	958	466	492	1980	890	424	466
1969	956	463	493	1981	890	424	466
1970	948	460	488	1982	893	426	467
1971	943	455	488	1983	893	425	468
1972	937	453	484	1984	897	426	471
1973	926	445	481	1985	906	431	475
1974	924	444	480	1986	906	431	475
				1987	906	430	476

*Averages for 1972 through 1986 are based on college-bound seniors. Averages for 1963 through 1971 are estimates provided by the College Board; background information needed for specific identification of college-bound seniors was not collected before 1972.

SOURCES: College Entrance Examination Board, *National Report: College-Bound Seniors*, various years.

Table 1:5-2.—American College Testing (ACT) scores: School years ending 1970-1987

Year	Composite	English	Mathematics	Social studies	Natural sciences
			Average test scores		
1970	19.9	18.5	20.0	19.7	20.8
1971	19.2	18.0	19.1	18.7	20.5
1972	19.1	17.9	18.8	18.6	20.6
1973	19.2	18.1	19.1	18.3	20.8
1974	18.9	17.9	18.3	18.1	20.8
1975	18.6	17.7	17.6	17.4	21.1
1976	18.3	17.5	17.5	17.0	20.8
1977	18.4	17.7	17.4	17.3	20.9
1978	18.5	17.9	17.5	17.1	20.9
1979	18.6	17.9	17.5	17.2	21.1
1980	18.5	17.9	17.4	17.2	21.1
1981	18.5	17.8	17.3	17.2	21.0
1982	18.4	17.9	17.2	17.3	20.8
1983	18.3	17.8	16.9	17.1	20.9
1984	18.5	18.1	17.3	17.3	21.0
1985	18.6	18.1	17.2	17.4	21.2
1986	18.8	18.5	17.3	17.6	21.4
1987	18.7	18.4	17.2	17.5	21.4

SOURCE: The American College Testing Program, *The High School Profile Report, Normative Data*, various years.

Table 1:5-3.—Scholastic Aptitude Test (SAT) scores, by control of high school: Selected school years ending 1981-1987

Year and control	Verbal	Math
	Median scores	
1981		
Public	420	467
Private	431	466
1982		
Public	423	469
Private	437	468
1983		
Public	421	467
Private	435	467
1984		
Public	423	469
Private	437	469
1985		
Public	427	475
Private	441	474
1987		
Public	428	476
Religiously affiliated	440	469
Independent	473	519

SOURCE: College Entrance Examination Board, *Profiles, College-Bound Seniors*, various years.

Table 1:5-4.—American College Testing (ACT) Program scores, by control of high school: Selected school years ending 1982-1987

Mean ACT scores	Composite	English	Math	Social studies	Natural sciences
1981-82					
Public	18.4	17.6	17.1	17.2	20.8
Private, non-Catholic	19.0	18.7	17.6	18.0	21.2
Catholic	19.1	18.6	17.9	18.2	21.2
1982-83					
Public	18.2	17.7	16.9	17.0	20.9
Private, non-Catholic	18.9	18.7	17.4	17.8	21.2
Catholic	19.1	18.7	17.7	18.1	21.3
1984-85					
Public	18.4	18.0	17.0	17.2	21.0
Private, non-Catholic	18.9	18.8	17.4	17.8	21.3
Catholic	19.2	18.9	17.8	18.1	21.4
1986-87					
Public	18.7	18.4	17.2	17.5	21.4
Private, non-Catholic	19.1	19.1	17.3	18.0	21.4
Catholic	19.1	19.0	17.5	18.1	21.4

SOURCE: American College Testing Program, *Reference Norms for Spring* [various years] *ACT Tested H.S. Graduates*, various years, and unpublished data, 1987.

Indicator 1:6

Table 1:6-1.—American College Testing (ACT) average scores, by subject and number of courses taken in subject: 1985

Subject	Total	Number of courses taken in subject*					
		1	2	3	4	5	6	7
	Average scores							
English	18.6	15.2	16.7	17.3	18.7	19.0	—	—
Mathematics	17.5	9.3	11.3	15.1	18.7	22.0	24.3	26.5
Social studies	17.8	15.2	17.0	17.9	18.2	18.5	18.4	18.3
Natural science	21.5	17.4	19.3	22.6	25.4	—	—	—

— Insufficient number of students for analysis.
*Courses may have been taken for one term or full year.

SOURCE: J. Laing, H. Engen, and J. Maxey, "The Relationship of High School Coursework to the Corresponding ACT Assessment Scores," *ACT Research Report 87-3*, 1987.

Indicator 1:7

Table 1:7-1.—High school completion of persons aged 18–19 and 20–24, by race and Hispanic origin: 1974–1986

Year	Age 18 to 19				Age 20 to 24			
	Total	White	Black	Hispanic*	Total	White	Black	Hispanic*
	Percent of age group							
1974	73.4	76.2	55.8	48.9	83.9	85.6	72.5	59.0
1975	73.7	77.0	52.8	50.0	83.9	85.9	70.5	61.3
1976	73.1	75.4	58.2	50.9	83.7	85.4	71.9	58.0
1977	72.9	75.7	54.9	50.7	83.7	85.1	73.4	56.6
1978	73.5	76.3	54.9	48.9	83.7	85.2	73.5	58.7
1979	72.8	75.3	56.4	53.7	83.2	84.9	71.8	55.8
1980	73.7	76.1	59.3	46.1	83.8	85.1	74.3	57.1
1981	72.5	74.8	59.6	47.2	83.7	85.0	75.7	59.3
1982	72.0	74.5	58.2	51.7	84.1	85.4	76.2	60.2
1983	72.7	75.6	59.1	50.3	83.3	84.6	75.8	56.6
1984	73.3	75.5	63.0	58.3	84.6	85.7	79.3	60.7
1985	74.6	76.7	62.8	49.8	85.3	86.0	80.8	67.4
1986	74.6	76.6	64.9	54.7	84.8	85.4	81.0	61.6

*Most of the year-to-year differences in completion rates for Hispanics are not statistically significant due to the small size of the Hispanic sample. Hispanics may be of any race.

NOTE: Separate analyses were not done for Asians because they are not identifiable from the October Current Population Survey data tapes.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "School Enrollment—Social and Economic Characteristics of Students, October [various years]," *Current Population Reports*, Series P-20; and unpublished tabulations.

Table 1:7-2.—High school completion of persons aged 25–34, by race and Hispanic origin: 1974–1986

Year	Total	White	Black	Hispanic*
		Percent of age group		
1974	81.1	82.6	68.4	49.2
1975	81.9	83.6	67.5	53.4
1976	82.3	83.6	71.4	51.5
1977	83.6	84.9	72.0	56.2
1978	84.6	85.9	74.4	55.0
1979	85.0	86.3	74.7	54.3
1980	85.4	86.7	76.4	56.1
1981	85.9	86.8	78.6	54.9
1982	86.3	87.3	79.7	56.6
1983	86.7	87.6	80.2	57.5
1984	86.8	87.9	79.9	58.9
1985	86.3	87.2	80.7	59.4
1986	86.5	87.4	80.1	60.0

*Hispanics may be of any race.

NOTE: For any given year, 18- to 19-, 20- to 24-, and 25- to 34-year-olds represent different groups of people. Therefore, these tables should be used with caution when attempting to make inferences about the completion rates of a specific group as it ages. Separate analyses were not done for Asians because they are not identifiable from the October Current Population Survey data tapes.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "School Enrollment—Social and Economic Characteristics of Students, October [various years]," *Current Population Reports*, Series P-20.

Indicator 1:8

Table 1:8-1.—Total and current expenditure per pupil in average daily attendance in public elementary and secondary schools: Selected school years ending 1950–1987

Year	Current dollars		Constant 1985–86[1] dollars	
	Total expenditure per pupil[2]	Current expenditure per pupil[3]	Total expenditure per pupil[2]	Current expenditure per pupil[3]
1950	$ 259	$ 209	$1,190	$ 960
1952	313	244	1,295	1,010
1954	351	265	1,420	1,072
1956	388	294	1,571	1,190
1958	449	341	1,709	1,298
1960	472	375	1,748	1,389
1962	530	419	1,918	1,516
1964	559	460	1,971	1,622
1966	654	537	2,229	1,830
1968	786	658	2,514	2,105
1970	955	816	2,751	2,351
1972	1,128	990	2,983	2,618
1974	1,364	1,207	3,182	2,816
1976	1,697	1,504	3,329	2,950
1977	1,816	1,638	3,367	3,037
1978	2,002	1,823	3,478	3,167
1979	2,210	2,021	3,510	3,210
1980	2,491	2,272	3,492	3,184
1981	[4]2,762	2,487	[4]3,470	3,125
1982	[4]2,997	2,726	[4]3,465	3,152
1983	[4]3,230	2,955	[4]3,580	3,276
1984	[4]3,500	3,173	[4]3,742	3,393
1985	[4]3,760	3,470	[4]3,869	3,571
1986	[4]4,070	3,752	[4]4,070	3,752
1987	[4]4,300	—	[4]4,206	—

— Data not available.

[1] Based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, U.S. Department of Labor, and adjusted to a school-year basis.

[2] Total expenditure includes all current expenditures, capital outlay and interest on school debt.

[3] Current expenditure includes expenditures for operating local public schools, excluding captital outlay and interest on debt.

[4] Estimated.

NOTE: Some data revised from previously published figures.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems* and *Revenues and Expenditures for Public Elementary and Secondary Education*, various years; Common Core of Data survey; and unpublished data. National Education Association, *Estimates of School Statistics*, various years, copyrighted.

Table 1:8-2.—Current expenditure per pupil in average daily attendance in public elementary and secondary schools, by State: School years ending 1970 and 1986

State	Expenditure per pupil (1985–86 dollars)		Percent increase	State	Expenditure per pupil (1985–86 dollars)		Percent increase
	1970	1986			1970	1986	
United States	$2,351	$3,752	59.6	Missouri	$2,041	$3,189	56.2
Alabama	1,567	2,565	63.6	Montana	2,253	4,091	81.6
Alaska	3,234	8,253	155.2	Nebraska	2,122	3,634	71.3
Arizona	2,075	3,093	49.1	Nevada	2,217	3,440	55.2
Arkansas	1,635	2,658	62.5	New Hampshire	2,083	3,542	70.0
California*	2,498	3,543	41.8	New Jersey	2,928	5,395	84.3
Colorado	2,126	3,975	87.0	New Mexico	2,037	3,195	56.9
Connecticut	2,741	4,743	73.1	New York	3,823	6,011	57.3
Delaware	2,593	4,610	77.8	North Carolina	1,764	2,982	69.0
District of Columbia	2,934	5,337	81.9	North Dakota	1,987	3,481	75.2
Florida	2,110	3,529	67.3	Ohio	2,103	3,527	67.7
Georgia	1,694	2,966	75.1	Oklahoma	1,742	3,146	80.7
Hawaii	2,422	3,807	57.2	Oregon	2,664	4,141	55.4
Idaho	1,738	2,484	42.9	Pennsylvania	2,540	4,416	73.8
Illinois	2,620	3,781	44.3	Rhode Island	2,568	4,667	81.8
Indiana	2,097	3,275	56.2	South Carolina	1,765	3,058	73.3
Iowa	2,432	3,619	48.8	South Dakota	1,988	3,051	53.5
Kansas	2,221	3,829	72.4	Tennessee	1,631	2,612	60.2
Kentucky	1,571	2,486	58.3	Texas	1,798	3,298	83.4
Louisiana	1,867	3,187	70.7	Utah	1,804	2,390	32.5
Maine	1,995	3,472	74.0	Vermont	2,326	4,031	73.3
Maryland	2,646	4,450	68.2	Virginia	2,039	3,520	72.6
Massachusetts	2,475	4,562	84.3	Washington	2,637	3,881	47.2
Michigan	2,604	4,176	60.3	West Virginia	1,930	3,528	82.8
Minnesota	2,603	3,941	51.4	Wisconsin	2,543	4,168	63.9
Mississippi	1,443	2,362	63.7	Wyoming	2,466	5,114	107.4

*Estimated by the Center for Education Statistics.

NOTE: 1985–86 dollars are based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, U.S. Department of Labor. These data do not reflect differences in inflation rates from State to State.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*; and Common Core of Data survey, special tabulations.

Indicator 1:9

Table 1:9-1.—Revenue sources for public elementary and secondary schools: Selected school years ending 1920–1987

Year	Total revenues[1]	Sources		
		Local[2]	State	Federal
	(In thousands)		Percent of total	
1920	$ 970,121	83.2	16.5	0.3
1930	2,088,557	82.7	16.9	0.4
1940	2,260,527	68.0	30.3	1.8
1950	5,437,044	57.3	39.8	2.9
1960	14,746,618	56.5	39.1	4.4
1970	40,266,923	52.1	39.9	8.0
1971	44,511,292	52.5	39.1	8.4
1972	50,003,645	52.8	38.3	8.9
1973	52,117,930	51.3	40.0	8.7
1974	58,230,892	50.1	41.4	8.5
1975	64,445,239	48.8	42.2	9.0
1976	71,206,073	46.5	44.6	8.9
1977	75,322,532	47.8	43.4	8.8
1978	81,443,160	47.6	43.0	9.4
1979	87,994,143	44.6	45.6	9.8
1980	96,881,165	43.4	46.8	9.8
1981	105,949,087	43.4	47.4	9.2
1982	110,191,257	45.0	47.6	7.4
1983	117,497,502	45.0	47.9	7.1
1984	126,055,419	45.4	47.8	6.8
1985[3]	137,294,678	44.4	48.9	6.6
1986[3]	149,004,882	43.9	49.5	6.7
1987[4]	160,908,262	43.8	50.0	6.2

[1] In current dollars.

[2] Includes intermediate sources.

[3] Revised from previously published figures.

[4] Preliminary data from the National Education Association.

NOTE: Percents may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on Common Core of Data survey and its predecessors). National Education Association, *Estimates of School Statistics, 1986–87*, 1987, copyrighted.

Table 1:10-1.—National index of public school revenues per pupil in relation to per capita income: Selected school years ending 1930–1987

Year	National index	Total education revenues (current dollars, in thousands)	Public elementary and secondary enrollment (in thousands)	Per pupil education revenues (current dollars)	Total personal income (current dollars, in thousands)	Total population (in thousands)	Per capita personal income (current dollars)
1930	11.667	$ 2,088,557	25,678	$ 81.34	$ 84,894,000	121,770	$ 697.17
1940	16.089	2,260,527	25,434	88.88	72,301,000	130,880	552.42
1950	15.708	5,437,044	25,111	216.52	204,918,000	148,665	1,378.39
1960	18.920	14,746,618	36,087	408.64	382,550,000	177,124	2,159.79
1970	24.217	40,266,923	45,619	882.68	766,522,000	210,298	3,644.93
1980	25.754	96,881,165	41,645	2,326.36	2,028,510,000	224,569	9,032.90
1981	26.061	105,949,087	40,987	2,584.94	2,254,076,000	227,255	9,918.71
1982	25.099	110,191,257	40,099	2,747.98	2,514,231,000	229,637	10,948.72
1983	25.810	117,497,502	39,652	2,963.22	2,663,498,000	231,996	11,480.79
1984	26.478	126,055,419	39,352	3,203.28	2,834,375,000	234,284	12,098.03
1985	26.643	137,294,678	39,293	3,494.13	3,101,267,000	236,477	13,114.46
1986	27.105	149,004,882	39,530	3,769.41	3,320,099,000	238,741	13,906.70
1987	27.614	*160,906,262	39,801	4,042.82	3,529,522,000	241,078	14,640.58

*Estimated by the National Education Association.

NOTE: Data have been substantially revised from previously published figures. Beginning in 1960, data include Alaska and Hawaii.

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on Common Core of Data surveys, various years); and unpublished data. National Education Association, *Estimates of School Statistics, 1986–87*, 1987, copyrighted. U.S. Department of Commerce, Bureau of Economic Analysis, *State Personal Income: 1929–82*, 1984, and Regional Economic Information System, August 1987.

Table 1:10-2. – State indices of public school revenues per pupil in relation to per capita income: School years ending 1980 and 1987

State	State index 1980	State index 1987	State and local education revenues (thousands) 1987	Public elementary/ secondary enrollment, Fall 1986	Per pupil education revenues 1987	Total personal income (millions) 1986*	Total population (thousands) 1986*	Per capita personal income 1986*
Alabama	19.9	19.1	$ 1,585,200	733,735	$ 2,160	$ 45,939	4,052	$11,337
Alaska	34.3	44.9	861,279	107,973	7,977	9,495	534	17,781
Arizona	25.1	19.3	1,387,060	534,538	2,595	44,719	3,319	13,474
Arkansas	18.4	23.4	1,133,388	437,438	2,591	26,268	2,372	11,074
California	21.6	22.2	16,463,619	4,377,989	3,761	456,098	26,981	17,472
Colorado	26.9	28.6	2,433,400	558,415	4,358	49,771	3,267	15,234
Connecticut	18.6	27.6	2,531,800	468,847	5,400	62,502	3,189	19,599
Delaware	27.1	29.3	414,758	94,410	4,393	9,498	633	15,005
District of Columbia	20.2	23.1	384,004	85,612	4,485	12,142	626	19,396
Florida	22.0	26.3	6,200,067	1,607,320	3,857	170,980	11,675	14,645
Georgia	20.2	20.9	3,088,030	1,096,425	2,816	82,078	6,104	13,447
Hawaii	19.3	26.5	649,000	164,640	3,942	15,814	1,062	14,891
Idaho	20.6	22.3	522,515	208,391	2,507	11,250	1,002	11,228
Illinois	20.5	24.1	6,866,424	1,825,185	3,762	180,052	11,552	15,586
Indiana	18.8	27.4	3,480,974	966,780	3,601	72,294	5,504	13,135
Iowa	24.5	26.0	1,669,318	481,286	3,468	38,053	2,851	13,347
Kansas	24.7	26.4	1,607,567	416,091	3,863	36,042	2,460	14,651
Kentucky	18.4	24.0	1,733,600	642,778	2,697	41,902	3,729	11,237
Louisiana	21.2	26.2	2,333,500	795,188	2,935	50,382	4,501	11,194
Maine	22.0	25.9	701,053	211,752	3,311	15,007	1,173	12,794
Maryland	24.2	26.3	2,996,702	675,747	4,435	75,272	4,463	16,866
Massachusetts	31.0	24.5	3,625,950	833,918	4,348	103,353	5,832	17,722
Michigan	25.4	25.5	6,342,139	1,681,880	3,771	135,113	9,145	14,775
Minnesota	27.7	27.8	2,964,100	711,134	4,168	63,184	4,214	14,994
Mississippi	17.6	22.0	1,065,000	498,639	2,136	25,504	2,625	9,716
Missouri	21.0	23.6	2,605,709	800,606	3,255	69,856	5,066	13,789
Montana	28.2	34.6	625,932	153,327	4,082	9,666	819	11,802
Nebraska	23.5	23.4	860,567	267,139	3,221	21,957	1,598	13,740
Nevada	18.2	21.7	540,519	161,239	3,352	14,870	963	15,441
New Hampshire	14.7	22.3	579,954	163,717	3,542	16,339	1,027	15,909

Table 1:10-2.—State indices of public school revenues per pupil in relation to per capita income: School years ending 1980 and 1987—Continued

State	State index 1980	State index 1987	State and local education revenues (thousands) 1987	Public elementary/ secondary enrollment, Fall 1986	Per pupil education revenues 1987	Total personal income (millions) 1986*	Total population (thousands) 1986*	Per capita personal income 1986*
New Jersey	29.1	31.9	$ 6,581,500	1,107,467	$5,943	$141,919	7,619	$18,627
New Mexico	25.2	27.3	880,451	281,943	3,123	16,894	1,479	11,423
New York	30.5	32.3	14,418,300	2,607,719	5,529	304,095	17,772	17,111
North Carolina	20.7	24.6	3,322,350	1,085,248	3,061	78,763	6,333	12,437
North Dakota	24.4	24.7	366,460	118,703	3,087	8,470	679	12,474
Ohio	22.1	25.4	6,340,000	1,793,508	3,535	149,807	10,752	13,933
Oklahoma	21.9	21.6	1,575,000	593,183	2,655	40,595	3,305	12,283
Oregon	25.9	29.0	1,734,300	449,307	3,860	35,955	2,698	13,327
Pennsylvania	26.2	33.3	7,935,100	1,674,161	4,740	169,392	11,888	14,249
Rhode Island	25.1	28.2	551,600	134,126	4,113	14,213	975	14,577
South Carolina	18.8	25.4	1,752,900	611,629	2,866	38,153	3,377	11,298
South Dakota	21.5	25.1	372,000	125,458	2,965	8,364	708	11,814
Tennessee	16.8	21.2	2,079,301	818,073	2,542	57,645	4,803	12,002
Texas	20.4	26.9	11,648,726	3,209,515	3,629	224,877	16,685	13,478
Utah	24.2	23.8	1,088,471	415,994	2,617	18,288	1,665	10,984
Vermont	26.1	28.9	355,340	92,112	3,858	7,220	541	13,346
Virginia	21.0	24.4	3,659,143	975,135	3,752	89,169	5,787	15,409
Washington	25.8	25.8	2,948,364	761,428	3,872	66,978	4,462	15,011
West Virginia	23.3	29.6	1,102,050	351,837	3,132	20,289	1,918	10,578
Wisconsin	25.6	30.7	3,281,270	767,819	4,273	66,549	4,785	13,908
Wyoming	25.7	54.5	703,950	100,955	6,973	6,485	507	12,791

*The figures shown are for calendar year 1986.

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on Common Core of Data surveys, various years); and unpublished data. National Education Association, *Estimates of School Statistics, 1986–87*, 1987, copyrighted. U.S. Department of Commerce, Bureau of Economic Analysis, *State Personal Income: 1929–82*, 1984, and Regional Economic Information System, August 1987.

Table 1:11-1. – Full-time-equivalent staff employed in public school systems: Selected school years ending 1960–1987

Type of staff	1960	1970	1981	1987
		(In thousands)		
Total	2,089	3,368	4,168	4,247
Classroom teachers[1]	1,353	2,023	2,184	2,243
Other staff[2]	736	1,344	1,984	2,004

[1] Includes a small number of teacher aides.

[2] Includes (a) instructional support staff, such as teacher aides, librarians, guidance counselors, principals, and assistant principals; (b) school district administrative staff, such as superintendents and their assistants, intermediate district staff, and supervisors of instruction; and (c) other support staff, such as clerical, transportation, food service, plant operation, and health staff.

NOTE: Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems*, various years; and special tabulations, 1987.

Indicator 1:11

Table 1:11-2.—Full-time-equivalent staff employed in public school systems: School years ending 1983–1987

Type of staff	1983	1984	1985*	1986*	1987
	Number (in thousands)				
All	3,927	3,908	4,063	4,161	4,247
Classroom teachers	2,121	2,126	2,168	2,207	2,243
Instructional support[1]	396	387	399	421	449
Administrators and administrative support[2]	511	512	511	516	540
Other support[3]	899	883	984	1,016	1,015
	Percentage distribution				
All	100.0	100.0	100.0	100.0	100.0
Classroom teachers	54.0	54.4	53.4	53.0	52.8
Instructional support	10.1	9.9	9.8	10.1	10.6
Administrators and administrative support	13.0	13.1	12.6	12.4	12.7
Other support	22.9	22.6	24.2	24.4	23.9

*Data revised from previously published figures.

[1] Includes instructional aides, guidance counselors, and librarians.

[2] Includes school and district administrators and the associated clerical staff.

[3] Includes all employees not included above, such as media personnel, bus drivers, security officers, cafeteria workers, etc.

NOTE: Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1985–86, 1987,* and *1988* (based on Common Core of Data survey); and unpublished estimates. See also "Staff in Public Elementary Schools, Secondary Schools, and School Systems, Fall 1984," *OERI Bulletin,* January 1987; and "Staff in Public Elementary and Secondary Schools and School Systems, Fall 1983," *OERI Historical Report,* February 1987.

Indicator 1:12

Table 1:12-1.—Estimated average annual salary of teachers in public elementary and secondary schools: Selected school years ending 1960–1987

Year	Current dollars			Constant 1986–87 dollars*		
	All teachers	Elementary teachers	Secondary teachers	All teachers	Elementary teachers	Secondary teachers
1960	$ 4,995	$ 4,815	$ 5,276	$18,913	$18,231	$19,976
1962	5,515	5,340	5,775	20,404	19,757	21,366
1964	5,995	5,805	6,266	21,612	20,927	22,589
1966	6,485	6,279	6,761	22,593	21,875	23,554
1968	7,423	7,208	7,692	24,275	23,571	25,154
1970	8,635	8,412	8,891	25,434	24,777	26,188
1971	9,267	9,021	9,568	25,963	25,269	26,801
1972	9,705	9,424	10,031	26,238	25,478	27,119
1973	10,176	9,893	10,507	26,444	25,709	27,304
1974	10,778	10,507	11,077	25,708	25,062	26,421
1975	11,690	11,334	12,000	25,109	24,344	25,774
1976	12,600	12,280	12,937	25,270	24,628	25,946
1977	13,354	12,989	13,776	25,315	24,623	26,115
1978	14,298	13,845	14,603	25,219	24,592	25,939
1979	15,032	14,681	15,450	24,410	23,840	25,089
1980	15,970	15,569	16,459	22,886	22,311	23,587
1981	17,644	17,230	18,142	22,664	22,132	23,304
1932	19,274	18,853	19,805	22,782	22,284	23,410
1983	20,693	20,226	21,288	23,451	22,922	24,125
1984	21,917	21,456	22,554	23,955	23,451	24,651
1985	23,595	23,185	24,197	24,823	24,391	25,456
1986	25,206	24,667	25,842	25,769	25,218	26,419
1987	26,704	26,141	27,351	26,704	26,141	27,351

*Based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, U.S. Department of Labor, and adjusted to a school-year basis.

NOTE: Data for some recent years have been revised from previously published figures.

SOURCE: National Education Association, *Estimates of School Statistics,* various years, copyrighted.

Indicator 1:13

Table 1:13-1.—Pupil/teacher ratios, by size, control, and level

School level	Total	Number of students enrolled: Less than 100	100–299	300–499	500 or more
		Public school ratio, 1984–85			
All schools*	18.5	11.6	15.7	18.4	19.2
Elementary	19.3	—	17.5	19.2	20.0
Secondary	17.9	—	13.2	16.1	18.5
Combined	15.0	—	10.8	15.1	19.0
		Private school ratio, 1985–86			
All schools*	17.5	12.2	16.0	17.8	20.2
Elementary	20.0	13.4	18.2	21.3	26.1
Secondary	17.2	—	11.3	14.1	19.8
Combined	12.7	10.6	11.8	12.9	14.2

—Too few cases for a reliable estimate.

*Does not include special education, alternative, and vocational/technical schools. Elementary schools contain no grade higher than 8. Secondary schools contain no grade lower than 7. Combined schools contain all other grade spans, such as K-12 or ungraded.

NOTE: Pupil/teacher ratios are the number of pupils enrolled divided by the number of full-time-equivalent teachers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1985–86 Private School Survey and 1985 Public School Survey, unpublished tabulations.

Table 1:13-2.—Trends in pupil/teacher ratios in public elementary and secondary schools: School years ending 1971–1988

Year	Pupil/teacher ratio	Year	Pupil/teacher ratio
1971	22.3	1980	19.1
1972	22.3	1981	18.8
1973	21.8	1982	18.9
1974	21.3	1983	18.7
1975	20.8	1984	18.5
1976	20.4	1985	18.1
1977	20.3	1986	17.9
1978	19.7	1987	[1]17.8
1979	19.3	1988	[2]17.7

[1]Preliminary.

[2] Early estimate.

NOTE: The basic data used to calculate the ratios in this table and in table 1:13-1 were collected by different surveys using different methodologies. Consequently, the estimated pupil/teacher ratio for 1984–85 in this table differs from the ratio in table 1:13-1.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools*, various years; and unpublished tabulations.

Table 1:13-3.—Trends in median class size in public elementary and secondary schools: Selected years, 1961–1986

Year	Elementary*	Secondary*
	Students per class	
1961	30	27
1966	29	27
1971	27	26
1976	26	25
1981	25	24
1986	24	22

*Elementary is defined as nondeparmentalized elementary, and secondary is defined as secondary and departmentalized elementary.

SOURCE: National Education Association, *Status of the American Public School Teacher 1985–86*, 1987, copyrighted.

Table 1:14-1.—Projected annual demand for new hiring of classroom teachers in public elementary/ secondary schools: Fall 1988–1997

Year	Projected demand for new hiring of teachers		
	Total	Elementary	Secondary
1988	128,000	80,000	48,000
1989	140,000	87,000	53,000
1990	143,000	87,000	57,000
1991	149,000	85,000	64,000
1992	161,000	87,000	74,000
1993	166,000	88,000	78,000
1994	169,000	88,000	81,000
1995	174,000	88,000	86,000
1996	174,000	89,000	84,000
1997	171,000	89,000	83,000

NOTE: Projections are substantially revised from previously published figures due to changes in projection methodology.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1997–98*, forthcoming.

Indicator 1:15

Table 1:15-1.—High school principals who reported having difficulty hiring fully qualified teachers for vacancies, by school size, type of community, and subject: School year ending 1986

Subject	Total	Size of school*			Type of community		
		Small	Medium	Large	Rural	Urban	Suburban
	Percent of principals						
Physics	72	73	72	67	77	67	65
Chemistry	63	64	64	56	69	60	52
Computer science	62	65	62	47	70	59	48
Mathematics	57	61	52	47	67	52	40
Foreign language	52	55	60	31	57	46	49
Biology/life science	38	44	33	18	50	33	13
Physical science	38	43	30	28	48	26	24
Earth/space science	38	43	30	27	49	30	14
Special education	37	41	31	31	48	29	16
General science	27	35	11	15	38	16	10
Social studies	6	5	10	6	7	8	4

*Small = fewer than 800 students
Medium = 800–1,400 students
Large = more than 1,400 students

NOTE: Schools that indicated "No vacancies/does not apply" for a particular subject were not included in the analysis for that subject. High school is defined as any school containing at least one of grades 10 through 12.

SOURCE: Iris R. Weiss, *Report of the 1985–86 National Survey of Science and Mathematics Education*, Research Triangle Institute, 1987; and personal communication with the author.

Table 1:16-1.—Public and private school enrollment, kindergarten through grade 12 (K–12): 1970–1986

Fall of year	Public school			Private school			Private school enrollment as a percentage of total enrollment		
	Total K–12	K–8	9–12	Total K–12	K–8	9–12	Total K–12	K–8	9–12
	Enrollment (in thousands)						Percent		
1970	46,193	32,648	13,545	5,655	4,485	1,170	10.9	12.1	8.0
1971	46,575	32,518	14,057	5,378	4,252	1,126	10.4	11.6	7.4
1972	45,344	31,329	14,015	5,203	4,048	1,155	10.3	11.4	7.6
1973	44,945	30,783	14,162	4,945	3,761	1,184	9.9	10.9	7.7
1974	44,957	30,682	14,275	4,867	3,695	1,172	9.8	10.7	7.6
1975	44,520	30,017	14,503	5,001	3,821	1,180	10.1	11.3	7.5
1976	44,201	29,660	14,541	4,804	3,603	1,201	9.8	10.8	7.6
1977	43,153	28,648	14,505	5,025	3,777	1,248	10.4	11.6	7.9
1978	41,976	27,745	14,231	4,978	3,734	1,244	10.6	11.9	8.0
1979	41,343	27,349	13,994	4,663	3,541	1,122	10.1	11.5	7.4
1980	—	27,088	—	—	3,537	—	—	11.5	—
1981	40,897	27,374	13,523	4,701	3,582	1,119	10.3	11.6	7.6
1982	40,131	27,127	13,004	4,702	3,584	1,118	10.5	11.7	7.9
1983	39,701	26,909	12,792	4,868	3,650	1,218	10.9	11.9	8.7
1984*	39,794	27,073	12,721	4,306	3,249	1,057	9.8	10.7	7.7
1985	39,788	27,024	12,764	4,872	3,657	1,215	10.9	11.9	8.7
1986	40,237	27,491	12,746	4,757	3,591	1,166	10.6	11.6	8.4

— Not available.

* An unexplained drop occurred in the number and proportion of private school students in 1984, according to the Bureau of the Census. However, the 1984 data appear to be an anomaly, since the 1985 and 1986 figures for private school students are very similar to those for 1983 and are consistent with the trend from 1979 to 1983.

NOTE: Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "School Enrollment—Social and Economic Characteristics of Students: October 1984 (Advance Report)" and "October 1985 (Advance Report)," *Current Population Reports*, Series P-20, Nos. 404 and 409; and personal communication with the author.

Indicator 1:17

Table 1:17-1.—Enrollment in kindergarten through grade 8 (K–8) and grades 9–12 of public elementary and secondary schools, with projections: 1969–1997

(In thousands)

Fall of year	Grades K–12*	Grades K–8*	Grades 9–12
1969	45,619	32,597	13,022
1970	45,909	32,577	13,332
1971	46,081	32,265	13,816
1972	45,744	31,831	13,913
1973	45,429	31,353	14,077
1974	45,053	30,921	14,132
1975	44,791	30,487	14,304
1976	44,317	30,006	14,311
1977	43,577	29,336	14,240
1978	42,550	28,328	14,223
1979	41,645	27,931	13,714
1980	40,987	27,674	13,313
1981	40,099	27,245	12,855
1982	39,652	27,156	12,496
1983	39,352	26,997	12,355
1984	39,295	26,918	12,377
1985	39,509	27,049	12,460
1986	39,837	27,404	12,434
1987	40,200	27,983	12,217
		Projected	
1988	40,200	28,439	11,841
1989	40,337	28,807	11,530
1990	40,752	29,366	11,386
1991	41,306	29,794	11,512
1992	41,879	30,178	11,701
1993	42,444	30,460	11,984
1994	43,014	30,624	12,390
1995	43,442	30,738	12,704
1996	43,775	30,772	13,003
1997	43,960	30,754	13,206

*Includes most kindergarten and some prekindergarten enrollment.

NOTE: Detail may not add to totals due to rounding. Some data revised from previously published figures.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1997–98*, forthcoming.

Indicator 1:18

Table 1:18-1.—Elementary and secondary students served in federally supported education programs for the handicapped, by type of handicap: School years ending 1979–1987

Type of handicap	1979	1980	1981	1982	1983	1984	1985	1986	1987
	Number served (in thousands)								
All conditions	3,889	4,005	4,142	4,198	4,255	4,298	4,315	4,317	4,374
Learning disabled	1,130	1,276	1,462	1,622	1,741	1,806	1832	1,862	1,914
Speech impaired	1,214	1,186	1,168	1,135	1,131	1,128	1126	1,125	1,136
Mentally retarded	901	869	829	786	757	727	694	660	643
Seriously emotionally disturbed	300	329	346	339	352	361	372	375	383
Hard of hearing and deaf	85	80	79	75	73	72	69	66	65
Orthopedically handicapped	70	66	58	58	57	56	56	57	57
Other health impaired	105	106	98	79	50	53	68	57	52
Visually handicapped	32	31	31	29	28	29	28	27	26
Multihandicapped	50	60	68	71	63	65	69	86	97
Deaf-blind	2	2	3	2	2	2	2	2	2
	Percentage distribution of children served								
All conditions	99.2	100.0	99.2	100.0	99.4	100.0	99.3	99.3	99.4
Learning disabled	29.1	31.9	35.3	38.6	40.9	42.0	42.4	43.1	43.8
Speech impaired	31.2	29.6	28.2	27.0	26.6	26.2	26.1	26.1	26.0
Mentally retarded	23.2	21.7	20.0	18.7	17.8	16.9	16.1	15.3	14.7
Seriously emotionally disturbed	7.7	8.2	8.4	8.1	8.3	8.4	8.6	8.7	8.8
Hard of hearing and deaf	2.2	2.0	1.9	1.8	1.7	1.7	1.6	1.5	1.5
Orthopedically handicapped	1.8	1.6	1.4	1.4	1.3	1.3	1.3	1.3	1.3
Other health impaired	2.7	2.6	2.4	1.9	1.2	1.2	1.6	1.3	1.2
Visually handicapped	.8	.8	.8	.7	.7	.7	.7	.6	.6
Multihandicapped	1.3	1.5	1.6	1.7	1.5	1.5	1.6	2.0	2.2
Deaf-blind	.1	(¹)	.1	(¹)	(¹)	.1	(¹)	(¹)	(¹)

Table 1:18-1.—Elementary and secondary students served in federally supported education programs for the handicapped, by type of handicap: School years ending 1979–1987—Continued

Type of handicap	1979	1980	1981	1982	1983	1984	1985	1986	1987
	Number served as a percent of total enrollment[2]								
All conditions	9.14	9.62	10.11	10.46	10.73	10.92	10.98	10.93	10.97
Learning disabled	2.66	3.06	3.57	4.04	4.39	4.59	4.66	4.71	4.80
Speech impaired	2.85	2.85	2.85	2.83	2.85	2.87	2.87	2.85	2.85
Mentally retarded	2.12	2.09	2.02	1.96	1.91	1.85	1.77	1.67	1.61
Seriously emotionally disturbed	.71	.79	.85	.85	.89	.92	.95	.95	.96
Hard of hearing and deaf	.20	.19	.19	.19	.18	.18	.17	.17	.16
Orthopedically handicapped	.16	.16	.14	.14	.14	.14	.14	.14	.14
Other health impaired	.25	.25	.24	.20	.13	.13	.17	.14	.13
Visually handicapped	.08	.08	.08	.07	.07	.07	.07	.07	.07
Multihandicapped	.12	.14	.17	.18	.16	.17	.17	.22	.24
Deaf-blind	.01	.01	.01	(3)	.01	.01	(3)	.01	(3)

[1] Less than 0.05.

[2] Based on enrollment in public schools, kindergarten through 12th grade.

[3] Less than 0.005.

NOTE: Counts are based on reports from the 50 States and the District of Columbia only (i.e., figures from U.S. territories are not included). Counts are from two Federal programs: the Education of the Handicapped program (3- to 21-year-olds) and Chapter 1 of the Education Consolidation and Improvement Act—State-Operated Programs (0- to 20-year-olds). Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Education, Office of Special Education and Rehabilitative Services, *Annual Report to Congress on the Implementation of the Education of the Handicapped Act*, various years. National Center for Education Statistics, Common Core of Data survey; and unpublished data.

Table 1:19-1.—Total number of teachers and teacher evaluation of the change in disruptive behavior, by school characteristics: School year ending 1987

School characteristic	Total teachers (in thousands)[1]	Percent of teachers indicating that, compared to 5 years ago, disruptive student behavior is				
		Much less now	Somewhat less now	About the same	Somewhat more now	Much more now
All teachers	1,932	10	17	28	25	19
School level[2]						
Elementary	941	8	12	27	29	24
Middle-junior high	310	13	22	24	22	20
Senior high	647	12	23	32	22	12
School size						
Fewer than 400	465	11	16	28	25	21
400 to 999	985	10	17	28	26	19
1,000 or more	482	10	19	30	24	17
Metropolitan status						
Urban (within SMSA, central city)	405	15	16	20	23	26
Suburban (within SMSA, outside central city)	888	8	16	32	26	18
Rural (outside SMSA)	640	11	19	28	26	16

[1] Includes regular classroom teachers only; excludes librarians, special education teachers, and guidance counselors.

[2]Elementary schools—lowest grade is less than 6 and the highest grade is less than 9; Middle-junior high schools—lowest grade is greater than 5 and the highest grade is less than 10; Senior high schools—lowest grade is greater than 6 and the highest grade is greater than 9; Combined schools—lowest grade is less than 6 and the highest grade is greater than 9. Combined schools are not listed as a separate school level because their number is so small; they are included in the totals and in analyses with other school characteristics. About 34,000 teachers taught in combined schools.

NOTE: Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Education, Center for Education Statistics, "Public School Teacher Perspectives on School Discipline," *OERI Bulletin*, October 1987.

Table 1:19-2.—Percent of public school teachers indicating extent to which student behavior interferes with their teaching, by school level and metropolitan status: School year ending 1987

Extent	Total	School level*			Metropolitan status		
		Elementary	Middle-junior high	Senior high	Urban	Suburban	Rural
To a great extent	14	16	14	11	24	14	8
To a moderate extent	26	26	26	24	20	27	27
To a small extent	50	48	52	50	47	49	52
Not at all	11	9	8	15	8	11	13

* Elementary schools—lowest grade is less than 6 and the highest grade is less than 9; Middle-junior high schools—lowest grade is greater than 5 and the highest grade is less than 10; Senior high schools—lowest grade is greater than 6 and the highest grade is greater than 9; Combined schools—lowest grade is less than 6 and the highest grade is greater than 9. Combined schools are not listed as a separate school level because their number is so small; they are included in the totals and in analyses with other school characteristics. About 34,000 teachers taught in combined schools.

NOTE: Percents may not add to 100 due to rounding.

SOURCE: U.S. Department of Education, Center for Education Statistics, "Public School Teacher Perspectives on School Discipline," *OERI Bulletin*, October 1987.

Indicator 1:20

Table 1:20-1.—Trends in the use of drugs and alcohol by high school seniors: Selected years, 1975–1987

Substance used	Class of 1975	1977	1979	1981	1983	1985	1986	1987
				Number				
Total	9,400	17,100	15,500	17,500	16,300	16,000	15,200	16,300
				Percent ever used				
All illegal drugs*	55.2	61.6	65.1	65.6	62.9	60.6	57.6	56.6
Cocaine	9.0	10.8	15.4	16.5	16.2	17.3	16.9	15.2
Alcohol	90.4	92.5	93.0	92.6	92.6	92.2	91.3	92.2
				Percent who used in the last 12 months				
All illegal drugs*	45.0	51.1	54.2	52.1	47.4	46.3	44.3	41.7
Cocaine	5.6	7.2	12.0	12.4	11.4	13.1	12.7	10.3
Alcohol	84.8	87.0	88.1	87.0	87.3	85.6	84.5	85.7
				Percent who used in the last 30 days				
All illegal drugs*	30.7	37.6	38.9	36.9	30.5	29.7	27.1	24.7
Cocaine	1.9	2.9	5.7	5.8	4.9	6.7	6.2	4.3
Alcohol	68.2	71.2	71.8	70.7	69.4	65.9	65.3	66.4

* Includes marijuana, hallucinogens, cocaine, and heroin, other opiates, stimulants, sedatives, or tranquilizers not under a doctor's orders. About 75 percent of these users reported smoking marijuana.

SOURCE: U.S. Department of Health and Human Services, Alcohol, Drug Abuse and Mental Health Administration, National Institute on Drug Abuse, *Drug Use Among American High School Students, College Students, and Other Young Adults*, 1986; and personal communication with the author. See also U.S. Department of Education, *Schools Without Drugs*, 1986.

Indicator 1:21

Table 1:21-1.—Actual and adjusted average reading proficiency scale scores, by average rating on school problems for 4th, 8th, and 11th graders: 1984

Grade and average rating on school problems[1]	Average reading scale score	
	Actual	Adjusted[2]
Grade 4		
Not a problem	229.6	223.0
Minor problem	209.5	213.5
Moderate problem	189.4	204.0
Grade 8		
Not a problem	271.9	266.1
Minor problem	257.5	259.1
Moderate problem	243.1	252.0
Grade 11		
Not a problem	306.3	296.7
Minor problem	289.4	289.1
Moderate problem	272.4	281.6

[1] School problems were rated by the principal as not a problem, minor, moderate, or serious problems. The problems included in this analysis include student absenteeism, lack of parent interest, lack of discipline, lack of teacher commitment/ motivation, teacher absenteeism, teacher turnover, low standards for students, and vandalism.

[2] Scores adjusted for race/ethnicity, language spoken in the home, parental education, and number of reading aids in the home.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "School Problems and Reading Performance," *Survey Report*, forthcoming.

Table 1:21-2.—Average rating of school problems, by grade and control of school: 1984

Grade and control of school	Average rating of school problems*		
	Not a problem	Minor	Moderate
	Percent of schools		
4th grade	56.4	42.3	1.3
Public	53.9	44.4	1.7
Private	66.1	34.0	.0
8th grade	53.3	44.4	2.3
Public	46.9	49.9	3.2
Private	67.6	32.1	.3
11th grade	11.9	73.9	14.2
Public	9.1	73.4	17.5
Private	22.6	76.0	1.4

* School problems were rated by the principal as not a problem, minor, moderate, or serious problems. The problems included in this analysis include student absenteeism, lack of parent interest, lack of discipline, lack of teacher commitment/motivation, teacher absenteeism, teacher turnover, low standards for students, and vandalism.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "School Problems and Reading Performance," *Survey Report,* forthcoming.

Indicator 1:22

Table 1:22-1.—Teachers who think that each of several factors is a "major cause" of students' difficulties in school, by wealth of district: 1987

Cause	Total teachers	Wealth of district		
		Above average	Average for State	Below average
	Number			
Total	1,002	223	424	342
	Percent			
Children left on their own after school	51	54	52	48
Poverty in the student's home	47	42	42	54
Automatic promotion to next grade	44	36	46	48
Teachers not adapting to individual student needs	43	40	46	40
Single parent families	42	46	43	40
Boring curriculum	34	29	36	34
Families where both parents work full time	25	25	26	25

SOURCE: *The Metropolitan Life Survey of The American Teacher 1987: Strengthening Links Between Home and School.*

Table 1:22-2. – Parents and teachers who think that each of several steps would "help a lot" to improve education: 1987

Step	Parents	Teachers
	Number	
Total	2,011	1,002
	Percent	
Having the school notify parents immediately about problems involving their child	88	77
Having parents limit television until all homework is finished	79	80
Having parents spend much more time with their children in support of school and teachers	70	84
Distributing a newsletter to parents about what's happening in school	68	51
Establishing a homework hotline students can call for homework advice	64	42
Having the school guide teachers more about how to involve parents better in the future	60	41
Getting teachers and parents to meet and talk about school policies	58	52

SOURCE: *The Metropolitan Life Survey of The American Teacher 1987: Strengthening Links Between Home and School.*

Table 1:22-3.—Criticisms that parents and teachers think are valid for many parents: 1987

Criticism	Parents	Teachers
	Number	
Total	2,011	1,002
	Percent saying "most" or "many"	
Leave their children alone too much on their own after school	59	62
Fail to discipline their children	58	51
Fail to motivate their children so that they want to learn in school	52	53
Take too little interest in their children's education	52	48
Neglect to see that their children's homework gets done	49	50
Fail to show respect for teachers	34	23
Set too high or too strict a standard for their children to meet	30	12

SOURCE: *The Metropolitan Life Survey of The American Teacher 1987: Strengthening Links Between Home and School.*

Table 1:22-4.—Characteristics of children, by frequency with which they are left alone after school, according to parents: 1987

Characteristic	Number of parents responding	How often the child is left alone after school		
		Never	1 or 2 days a week	Almost every day
		Percent of parents responding		
Total parents	2,011	58	17	24
Child's school level				
Elementary	898	75	13	12
Junior high	368	53	17	30
High school	503	40	21	38
Size of place				
Central city	490	58	14	26
Rest of metro area	963	59	17	23
Outside metro area	558	57	19	24
Race				
White	1,573	59	17	23
Black	211	51	17	31
Hispanic	150	62	15	21
Education of parent				
Less than high school	238	59	11	29
High school graduate	813	63	16	21
Some college	440	52	22	25
4-year college graduate	309	56	17	26
Beyond college	208	52	25	22

Table 1:22-4.—Characteristics of children, by frequency with which they are left alone after school, according to parents: 1987—Continued

Characteristic	Number of parents responding	How often the child is left alone after school		
		Never	1 or 2 days a week	Almost every day
		Percent of parents responding		
Status of parents				
One-parent families				
Not working	80	68	9	23
Work part time	64	48	17	35
Work full time	291	45	14	40
Two-parent families				
One not working	533	74	13	12
Both work, one part time	417	60	26	13
Both work full time	626	49	18	32
Family income				
$7,500 or less	130	59	12	28
$7,501 to $15,000	198	58	11	29
$15,001 to $25,000	397	60	15	24
$25,001 to $35,000	420	60	22	17
$35,001 to $50,000	436	57	18	24
$50,001 and over	305	52	21	26

SOURCE: *The Metropolitan Life Survey of the American Teacher, 1987: Strengthening Links Between Home and School.*

Indicator 1:23

Table 1:23-1.—The public's rating of the schools—percent giving the schools an A, B, C, D, or F: 1977–1987

	Rating of local schools							Rating of the Nation's schools						
Year	A	B	C	D	F	Don't know	Average grade*	A	B	C	D	F	Don't know	Average grade*
1977	11	26	28	11	5	19	2.33	—	—	—	—	—	—	—
1978	9	27	30	11	8	15	2.21	—	—	—	—	—	—	—
1979	8	26	30	11	7	18	2.21	—	—	—	—	—	—	—
1980	10	25	29	12	6	18	2.26	—	—	—	—	—	—	—
1981	9	27	34	13	7	10	2.20	2	18	43	15	6	16	1.94
1982	8	29	33	14	5	11	2.24	2	20	44	15	4	15	2.01
1983	6	25	32	13	7	17	2.12	2	17	38	16	6	21	1.91
1984	10	32	35	11	4	8	2.36	2	23	49	11	4	11	2.09
1985	9	34	30	10	4	13	2.39	3	24	43	12	3	15	2.14
1986	11	30	28	11	5	15	2.36	3	25	41	10	5	16	2.13
1987	12	31	30	9	4	14	2.44	4	22	44	11	2	17	2.18

— Not available.

*Average grades do not include "don't know" responses.

SOURCE: George H. Gallup, "The 19th Annual Gallup Survey of the Public's Attitudes Toward the Public Schools," *Phi Delta Kappan*, September 1987.

Table 1:23-2.—The public's confidence in selected institutions: Selected years, 1973–1987

Institution	1973	1975	1977	1979	1981	1983	1985	1986	1987
	Percent having a "great deal" or "quite a lot" of confidence								
Church	66	68	65	65	64	62	66	57	61
Military	–	58	57	54	50	53	61	63	61
Supreme Court	44	49	46	45	46	42	56	53	52
Banks	–	–	–	60	46	51	51	49	51
Schools	58	–	54	53	42	39	48	49	50
Congress	42	40	40	34	29	28	39	41	–
Newspapers	39	–	–	51	35	38	35	37	31
Big business	26	34	33	32	20	28	31	28	–
Television	37	–	–	38	25	25	29	27	28
Labor	30	38	39	36	28	26	28	29	26

– Not available.

SOURCE: The Gallup Poll, August 16, 1987.

Table 1:23-3.—Percent of the public grading the public schools A, B, C, D, or F, by type of school parent's child attends: 1987

Grade	Rating of the local public schools			Rating of the Nation's public schools		
	National totals	Public school parents	Nonpublic school parents	National totals	Public school parents	Nonpublic school parents
A	12	19	7	4	7	4
B	31	37	18	22	23	13
C	30	30	45	44	42	59
D	9	9	15	11	14	12
Fail	4	3	8	2	2	3
Don't know	14	2	7	17	12	9
Avg. grade*	2.44	2.61	2.01	2.18	2.22	2.03

* Average grades do not include "don't know" responses.

SOURCE: George H. Gallup, "The 19th Annual Gallup Survey of the Public's Attitudes Toward the Public Schools," *Phi Delta Kappan*, September, 1987.

Indicator 1:24

Table 1:24-1.—Average years of coursework required for high school graduation in private schools with grade 12: School year ending 1986

School characteristic	Subject area				
	Mathematics	Science	English	Foreign languages	Social studies
Total	2.8	2.5	3.9	1.2	3.1
Orientation					
Catholic	2.6	2.3	4.0	1.4	3.0
Other religious	2.8	2.6	3.9	.9	3.2
Nonsectarian	3.0	2.5	4.0	1.9	2.9
Type/level[1]					
Secondary	2.7	2.3	4.0	1.4	3.0
Combined	2.9	2.6	3.9	1.1	3.1
Other	2.8	2.7	4.0	1.0	3.4
Recommendations of National Commission on Excellence in Education[2]	3.0	3.0	4.0	[3]2.0	3.0

[1] Secondary and combined are regular schools, while other schools are primarily alternative schools. Secondary schools have no grade lower than 7, while combined schools have at least one grade lower than 7.

[2] An additional half year was recommended in computer science. However, data were not gathered about coursework requirements in computer science.

[3] The Commission's recommendations about foreign languages applied only to the college-bound, not to all students. The figures for actual requirements represent what was required for all students.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Private Schools and Private School Teachers: Final Report of the 1985–86 Private School Study*, 1987.

Table 1:24-2.—Average years of coursework required for high school graduation by public school districts with high schools, by subject area: School years ending 1982, 1985, and 1988

Item	Subject area				
	Mathematics	Science	English	Foreign languages	Social studies
1982	1.6	1.5	3.6	(1)	2.6
1985	1.9	1.8	3.8	0.1	2.8
1988[2]	2.3	2.0	3.9	.2	2.9
Recommendations of National Commission on Excellence in Education[3]	3.0	3.0	4.0	[4]2.0	3.0

[1] Less than 0.05 years.

[2] Expectations as of fall 1985 about requirements for seniors graduating in 1988.

[3] Another half year of coursework was recommended in computer science. Almost no school districts had requirements in this area in 1981–82. That situation changed by 1984–85, when the average for all school districts was 0.1 years of coursework required in computer science for graduation; the expected average for 1987–88 was 0.2 years.

[4] The Commission's recommendations about foreign languages applied only to the college-bound, not to all students. The figures for actual requirements represent requirements for all graduates.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Public High School Graduation Requirements," *OERI Bulletin*, 1986; and unpublished tabulations.

Table 1:24-3.—Number of courses required for high school graduation in 1980 and 1987, year effective, and increase in units required, by State: 1987

State	Number of units required, 1980	Number of units required, 1987	Year effective[1]	Change 1980–87
Alabama	20	22	1989	2
Alaska	19	21	1985	2
Arizona	16	20	1987	4
Arkansas	16	20	1988	4
California	([2])	13	1987	—
Colorado	Local boards determine		—	—
Connecticut	([2])	20	1988	—
Delaware	18	19	1987	1
District of Columbia	18	20.5	1985	2.5
Florida	([2])	24	1987	—
Georgia	20	21	1988	1
Hawaii	20	20	([3])	0
Idaho	18	20	1988	2
Illinois	16	16	([3])	0
Indiana	16	19.5	1989	3.5
Iowa	Local boards determine all but 2.5 units		—	—
Kansas	17	21	1989	4
Kentucky	18	20	1987	2
Louisiana	20	23	1989	3
Maine	16	16	([3])	0
Maryland	20	20	([3])	0
Massachusetts	Local boards determine all but 5 units		—	—
Michigan	Local boards determine all but .5 units		—	—
Minnesota	15	20	1982	5
Mississippi	16	18	1989	2
Missouri	20	22 or 24	1988	2 or 4
Montana	16	20	1986	4
Nebraska	160 semester hours	200 credit hours	1991	—
Nevada	19	22.5	1992	3.5
New Hampshire	16	19.75	1989	3.75
New Jersey	18.5	21.5	1992	3
New Mexico	20	23	1990	3
New York	16 or 18	18.5	1989	.5 or 2.5
North Carolina	16	20	1987	4
North Dakota	17	17	([3])	0

Table 1:24-3.—Number of courses required for high school graduation in 1980 and 1987, year effective, and increase in units required, by State: 1987—Continued

State	Number of units required, 1980	Number of units required, 1987	Year effective[1]	Change 1980–87
Ohio	17	18	1988	1
Oklahoma	10.5	15 or 20	1987 or 1988	4.5 or 9.5
Oregon	21	22	1988	1
Pennsylvania	13	21	1989	8
Rhode Island	16	16 or 18	1988 or 1989	0 or 2
South Carolina	18	20	1987	2
South Dakota	16	20	1989	4
Tennessee	18	20	1987	2
Texas	18	21 or 22	1988	3 or 4
Utah	15	24	1988	9
Vermont	—	14.5	1989	—
Virginia	18	20 or 22	1985 or 1988	2 or 4
Washington	—	19	1989	—
West Virginia	18	21	1989	3
Wisconsin	([2])	13	1989	—
Wyoming	18	18	([3])	0

— Not applicable or not available.

[1] Effective for the graduating class of this year.

[2] Local boards determine requirements.

[3] No change in requirements.

NOTE: Some States award more than one type of high school diploma, with each type requiring a different number of units.

SOURCE: Education Commission of the States, Department of Research and Information, "Minimum High School Graduation Course Requirements in the States," *Clearinghouse Notes*, November 1985; and unpublished data.

Indicator 1:25

Table 1:25-1.—High schools offering selected courses, by school size and type of community: School year ending 1986

Characteristic	Sample size (number)	Subject			
		Biology	Chemistry	Physics	Calculus
		Percent of schools			
Total	360	99	91	81	31
School size*					
Small	134	99	87	74	22
Medium	106	100	99	98	48
Large	120	97	98	94	57
Type of community					
Rural	128	99	88	75	18
Urban	106	97	90	85	39
Suburban	126	99	97	90	54

* Small = fewer than 800 students
Medium = 800–1,400 students
Large = more than 1,400 students

NOTE: A high school is defined as any school including at least one of grades 10 through 12.

SOURCE: Iris R. Weiss, *Report of the 1985–86 National Survey of Science and Mathematics Education,* Research Triangle Institute, 1987.

Table 1:25-2.—High schools offering 0, 1, 2, 3, 4, and 5 or more sections of selected courses: School year ending 1986

Course	Number of sections					
	0	1	2	3	4	5 or more
	Percent of schools					
Biology	1	23	16	14	6	40
Chemistry	9	35	18	9	6	23
Physics	19	52	13	6	5	5
Calculus	69	23	8	0	0	0

NOTE: A high school is defined as any school including at least one of grades 10 through 12.

SOURCE: Iris R. Weiss, *Report of the 1985–86 National Survey of Science and Mathematics Education*, Research Triangle Institute, 1987.

Indicator 1:26

Table 1:26-1.—States that have enacted testing programs for initially certifying teachers: Fall 1987

State	Enacted	Effective	Test used[1]
Alabama	1980	1981	State
Arizona	1980	1980	State
Arkansas	1979	1983	NTE
California	1981	1982	CBEST
Colorado	1981	1983	CAT
Connecticut	1982	1985	State
Delaware	1982	1983	PPST
Florida	1978	1980	State
Georgia	1975	1980	State
Hawaii	1986	1986	NTE
Idaho	1987	1988	NTE
Illinois	1985	1988	State
Indiana	1984	1985	NTE
Kansas	1984	1986	NTE and PPST
Kentucky	1984	1985	NTE
Louisiana	1977	1978	NTE
Maine	1984	1988	NTE
Maryland	1986	1986	NTE
Massachusetts	1985	(2)	(2)
Michigan	1986	1991	(2)
Minnesota	1986	1988	PPST
Mississippi	1975	1977	NTE
Missouri	1985	1988	(2)
Montana	1985	1986	NTE
Nebraska	1984	1989	(2)

Table 1:26-1.—States that have enacted testing programs for initially certifying teachers: Fall 1987—Continued

State	Enacted	Effective	Test Used[1]
Nevada	1984	1989	PPST and State
New Hampshire	1984	1985	PPST and NTE
New Jersey	1984	1985	NTE
New Mexico	1981	1983	NTE
New York	1980	1984	NTE
North Carolina	1964	1964	NTE
North Dakota	1986	([2])	([2])
Ohio	1986	1987	NTE
Oklahoma	1980	1982	State
Oregon	1984	1985	CBEST
Pennsylvania	1985	1987	State
Rhode Island	1985	1986	NTE
South Carolina	1979	1982	NTE and State
South Dakota	1985	1986	NTE
Tennessee	1980	1981	NTE
Texas	1981	1986	State
Virginia	1979	1980	NTE
Washington	1984	([2])	([2])
West Virginia	1982	1985	State
Wisconsin	1986	1990	([2])

[1]Tests:
CAT = California Achievement Test;
CBEST = California Basic Skills Test;
NTE = National Teacher Examination;
PPST = Pre-Professional Skills Test;
State = State-developed test.

[2]To be determined.

SOURCES: U.S. Department of Education, Office of Research, *What's Happening in Teacher Testing—1987*, August 1987. Education Commission of the States: personal communication with the author.

United States
Department of Education
Washington, DC 20208

Official Business
Penalty for Private Use $300

Special Fourth Class